NEW EQUIPMENT DIGEST

A Penton Publication

November, 1959

Volume 24—Number 11

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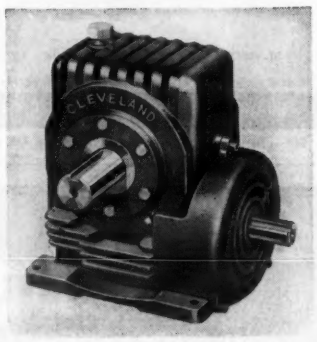
CHECK AND PASS ALONG

✓	NAME	See No.

Use Inquiry Slips—Pages 4 and 100

EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

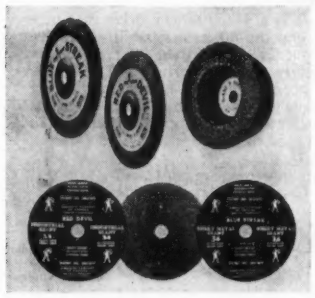
SPEED REDUCERS
sizes range from 1 to 40 hp



Fan cooling, bronze gears, and heat treated alloy steel worms permit high input horsepower and output torque ratings in this line of speed reducers. They transmit up to 80 per cent more horsepower than the units they replace. Both worm and gear shafts have Timken tapered roller bearings. Centrifugally cast bronze rims on gears are integral with a cast iron center. Standard ratios range from 5:1 to 60:1. Units have 3, 3½, 4, 5, and 6-in. centers and can be specified with various shaft arrangements. In production are reducers from 1 to 40 hp, priced from $136 to $572. Larger sizes will be offered. Made by **Cleveland Worm & Gear Co.**, 3300 E. 80th St., Cleveland 4, Ohio.

▲ For more details circle **NED-1 L9** on enclosed inquiry slip ▲

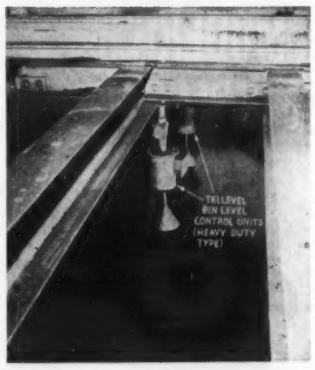
ABRASIVE DISCS & WHEELS
grits are vertically positioned



An abrasive for every type of portable right angle grinding is now available with the addition of resin bonded depressed center and cup wheels to the line of Magnecoated discs. The Magnecoating process vertically positions the grit particles in high concentration, standing them on end to produce more cutting edges. Sample disc will be sent upon receipt of application and size data. Made by **Abrasive Co. of America**, 492 Main St., Ft. Lee, N. J.

▲ For more details circle **NED-2 L9** on enclosed inquiry slip ▲

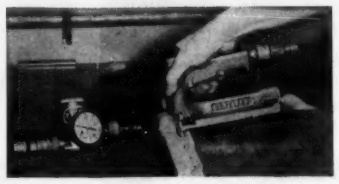
BIN LEVEL CONTROLS
start or stop feed conveyors



Level of bulk materials in bins or tanks is regulated by any of three Tellevel automatic bin controls. Each is a self-contained unit with a pendant float that operates a sensitive enclosed switch. As material level rises or falls, the control stops or starts feed conveyors or elevators. Units also operate warning lights or horns, and can be installed near the top, bottom, or various levels. Controls are usually connected for a normally-closed circuit, but can be used in a normally-open circuit. Normal duty Tellevel is used for light to medium weight granular material. The explosionproof unit is used in hazardous locations, and the heavy duty unit is for heavy, lumpy materials. Made by **Stephens-Adamson Mfg. Co.**, 12 Ridgeway Ave., Aurora, Ill.

▲ For more details circle **NED-3 L9** on enclosed inquiry slip ▲

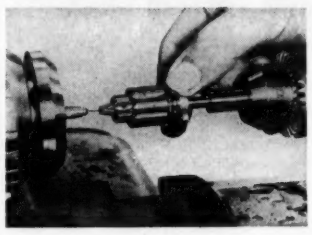
AIR TACKER
drives staples into hard wood



Operating on pressures as low as 40 psi, the Model T21 air-driven tacker has minimum recoil for low operator fatigue. It will drive staples into the hardest woods. The 0.025-in. round wire staples combine low cost with penetrating and holding power. Machine also takes 0.050 x 0.019-in. flat wire staples. Two detachable magazines provide quick change over for staple lengths from 3/16 to 9/16 in. Made by **Bostitch**, 2012 Briggs Dr., East Greenwich, R. I.

▲ For more details circle **NED-4 L9** on enclosed inquiry slip ▲

FINE-HOLE DRILLER
has accuracy within 0.0002 in.



Precision Hunter-Stanley driller for ultra-fine holes is offered with either the Albrecht micrometer chuck or the small Jacob's chuck. Accuracy is within 0.0002 in. Finger-tip control allows operator to feel his way with drill and thus minimize breakage. Picture shows driller at work on a lathe. Made by **Hunter Tool**, Box 564, Whittier, Calif.

▲ For more details circle **NED-5 L9** on enclosed inquiry slip ▲

SMALL DUNKING STATION
coil spring safely parks cigarette

Coil spring across the hinged lid of this Model M Midget Size Safe Smoker safely holds unfinished cigarets. Dunking station is designed for use in telephone booths, elevators, toilet stalls, or on benches and work tables where an individual-type smoke station is required. It has a cast aluminum canister and is offered in either gray crinkle or bright polished finishes. Made by **Standard Industrial Products Co.**, 3527 Farmington Rd., Peoria, Ill.

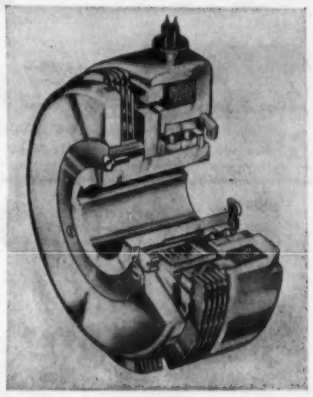
▲ For more details circle **NED-6 L9** on enclosed inquiry slip ▲

DRINKING WATER FILTER
removes all water-borne bacteria

Steri-Pore in-line drinking water filter is installed in a separate cold water line for filtering water to be used for drinking or other uses where absolute purity is required. Filter element removes all water-borne bacteria. Capacity is 3 qt per minute at 40 psi. The filter unit releases a measured amount of silver ions to maintain constant sterilization. Cleaning is by simple disassembly and by brushing filter unit with a stiff brush. Made by **Filtros Inc.**, East Rochester, N. Y.

▲ For more details circle **NED-7 L9** on enclosed inquiry slip ▲

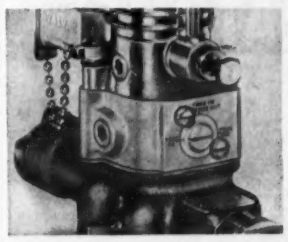
ELECTROMAGNETIC CLUTCH
eight sizes have ¼ to 34½-hp range



An almost unlimited variety of spindle speeds, feed and traverse movements, and directional changes are possible with the German design Model KA wet type electromagnetic clutch. Compact design suits it for use in semiautomatic and automatic process machines, as well as program and tracer machines. Annular flux is through the plates for high torque capacity and automatic wear take-up. Since 110-v ac rectifies to 90-v dc, no transformer is needed. Eight diameters from 3.3 to 11.5 in. offer a capacity range of ¼ to 34½ hp at 100 rpm with maximum torques of 14.5 to 1812 lb-ft. Available from **Twin Disc Clutch Co.**, Racine, Wis.

▲ For more details circle **NED-8 L9** on enclosed inquiry slip ▲

VALVE TIMING HEAD
for 0 to 30-sec time delay



Time delay in valve function from 0 to 30 sec is provided by this universal timing sequence head for all Valvair Speed King and Inline Valves. It is designed to time in, time out, or do both functions. Desired interval is set with micro-threaded metering pin in side of the head. Repeatability is within 2 per cent. Heads are offered for direct mounting between pilot and valve body, or for direct mounting on valve body with remote pilot control. They add only 1¼ in. to overall height of valve assembly. Made by **Valvair Corp.**, 454 Morgan Ave., Akron 11, Ohio.

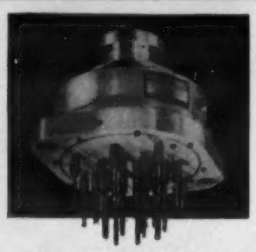
▲ For more details circle **NED-9 L9** on enclosed inquiry slip ▲

CLINCH NUTS
for high voltage circuit use

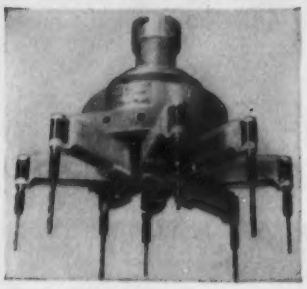
Strength, vibration, and shock requirements of electronic components are met by the Type NKCFM miniature self-locking clinch nut which has an integral nylon cap. The cap prevents chafing of wires by exposed bolt ends, limits corona and electrical discharge in high voltage circuits, and seals internal or external pressures up to 80 psi. Nuts can be used under environmental temperatures up to 350° F, permitting use in potted components. Installation may be by hand or by riveting or spinning. Nuts are pressed into drilled or punched holes in aluminum or soft steel sheet and fixed in place by expanding the shank. They are offered in 4-40 to 10-32 thread sizes in cadmium plated or stainless steel. Made by **Elastic Stop Nut Corp. of America**, 2330 Vauxhall Rd., Union, N. J.

▲ For more details circle **NED-10 L9** on enclosed inquiry slip ▲

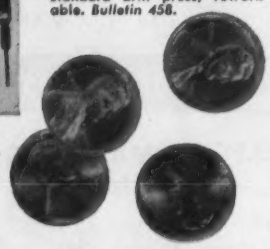
MEET COMPETITION
HEAD ON
with Zagar Drilling, Tapping and Reaming Equipment



With Zagar FIXED CENTER Drill Heads you can drill up to 1500 holes per pass. Also, they can be designed so as to give flexibility and changeability. *Engineering Sheets 66 to 68-A.*



Zagar ADJUSTABLE SPINDLE HEAD eliminates gear clusters, universal joints and flexible shafts. Unlimited inner hole patterns with bolt circles up to 23" diameter. Adaptable to any standard drill press; reworkable. *Bulletin 458.*

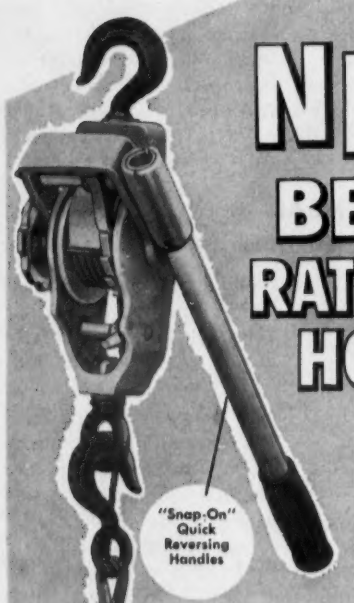


Just pennies per part

23880 LAKELAND BLVD.
CLEVELAND 23, OHIO
Zagar INCORPORATED
TOOLS FOR INDUSTRY and SPECIAL MACHINERY

For more details circle NED-11 L9 on enclosed inquiry slip

BIG POWER
-in a portable package!



NEW! BEEBE RATCHET-HOISTS

6 MODELS
12 CAPACITIES
750 Lbs. to 4000 Lbs.

Manufactured by
BEEBE BROS.
The most famous name in hand winches for over 40 years!

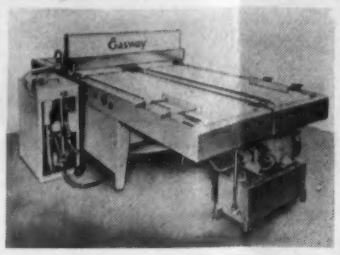
Here's a new line of RATCHET-HOISTS backed by the reliable name of BEEBE BROS. • Superior to anything on the market • Simplified design with fewer parts • Extra strength from oversize steel shafts • Cable wind-up handles standard on all models • Triple-hook system standard on all models • Safety handles • Design tested for overload • Warranted 1 year against defective parts.

ASK YOUR INDUSTRIAL DISTRIBUTOR ABOUT THE NEW LINE OF BEEBE RATCHET-HOISTS

BEEBE BROS.
Manufacturing Company
2732 Sixth Avenue South • Seattle 4, Wash.
Beebe Winches—strongest geared power for their weight in the world

For more details circle NED-12 L9 on enclosed inquiry slip

COATING MACHINE
flows or pours coating onto work in thicknesses from ½ to 25 mils

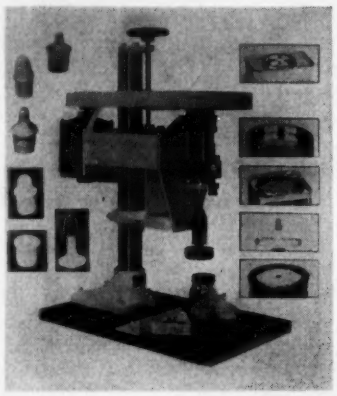


Work passes through a continuous, falling curtain of paint, varnish, lacquer, or other finishing material on this Gasway Electric - Kurtain Coater. Thickness of deposit is regulated by flow rate of curtain and speed of travel of work through the coater. Machine employs a weir or dam over which material flows to produce the curtain. Coating thicknesses can be varied from ½ to 25 mils. By running work pieces through at suitable angles, as many as three sides can be coated in one pass. Maximum work thickness is 8 in.

Machine has self-cleaning filter and features a portable paint system which allows changing of colors in a few minutes. Conveyor speed is variable from 50 to 450 fpm. Machines are furnished with 3-hp, 220-440 v, 60-cycle, explosionproof motors and are offered in 30, 45, 60, and 70-in. sizes which respectively coat materials 25, 40, 56, and 65 in. wide. Reservoir has 15-gal capacity. Made by **Gasway Corp.**, 4343 N. Ravenswood Ave., Chicago 26, Ill.

For more details circle NED-13 L9 on enclosed inquiry slip

SCREW CAPPER & LIDDER
closes variety of packages at speeds to 40 per minute



Multipurpose Whirlwind screw capper and lidder will turn out up to 40 sealed containers per minute without operator fatigue. Besides screw capping, it can seal plastic spray and dispensing plugs into polyethylene squeeze bottles. With suitable spinning heads, it applies aluminum seals to vials, plastic push-in dispensing spouts to lighter fluid and household oil containers, single or double friction lids on metal and fiber cans, and tamperproof plugs of all types on Style F cans.

Operator places screw cap, spout, lid, or plug loosely on container and inserts it into a V-shaped guide. An air-operated foot valve actuates the capping head to secure the closure. Made by **Scientific Filter Co.**, 57 Rose St., New York 38, N. Y.

For more details circle NED-14 L9 on enclosed inquiry slip

UNUSUAL BARGAINS

Check, Measure, Inspect with this 6 POWER POCKET COMPARATOR
(Complete with Leather Case)
MEASURES • Angles • Radii • Circles • Linear—in both decimal inches and millimeters. Used to check layouts, machining on tools, dies, gauges; to check threads, chamfers, wear on cutting tools, etc.
Stock No. 30,061-AE...New Low Price. $19.50 Pstpd. Send Check or M.O.—or order on open account.

HANDY! FAST! ACCURATE!

STEREO-MICROSCOPE Terrific Buy! American Made!
Other American made Stereos cost $250.00 to $600.00 and more! Now—save well over 50%! Up to 3" Working Distance—Wide 3 Dimensional Field—Used in production, in research, or at home; for inspections, examinations, counting, checking, assembling. 2 sets of objectives on rotating turret. Standard pair of wide field 10X Kellner Eyepieces give you 23 power and 40 power clear, sharp, erect image. Helical rack and pinion focusing. Interpupillary distance adjustable. SO GOOD, WE'LL SHIP ON 10-DAY FREE TRIAL. Stock No. 85,056-AE—full price, $99.50 f.o.b. Barrington, N. J.

GIANT MAGNETS! TERRIFIC BARGAINS!
War surplus—Alnico V-type! Horseshoe shape. Tremendous lifting power. 5 lb. size. Dimensions: A—3¼"; B—2¾"; C—4-3/16"; D—1¼"; E—1¼"; F—2⅝". Strength is about 2,000 Gauss. Will lift over 125 lbs.
Stock No. 70,183-AE ..... $8.50 ppd.

NEW! STATIC ELECTRICITY GENERATOR
Educational and Lots of Fun!

See a thrilling spark display as you set off a miniature bolt of lightning. Absolutely safe and harmless. Stands 14" high. Turn the handle and two 9" plastic discs rotate in opposite directions. Metal collector brushes pick up the static electricity, store it in the Leyden jar type condenser until discharged by the jumping spark. Countless tricks and experiments. 24 page Instruction booklet included.
Stock No. 70,070-AE .....$12.95 Postpaid
Order by Stock No.—Check, M.O. or Open Account—Money-back Guarantee

FREE! Giant CATALOG of OPTICAL BUYS!
OVER 1,000 OPTICAL ITEMS . . . Many on-the-job helps . . . quality control aids! 128 pages—hundreds of illustrations. Many war surplus bargains! Imported Instruments! Lenses, Prisms, Magnifiers, Telescopes, Satellite Scopes, Microscopes, Binoculars, etc. Optics for industry, research lab, experimenters, hobbyists, math learning aids. No obligation. Write for FREE Catalog AE

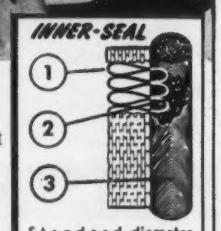
EDMUND SCIENTIFIC CO., Barrington, N. J.

For more details circle NED-15 L9 on enclosed inquiry slip

Bridgeport **INNER-SEAL WEATHERSTRIPPING**

SEALS } Doors Cabinets Hatches | Windows Compartments | Panels Covers Lids

(1) **SPRING WIRE** — Flexible — Resilient — Durable
(2) **Kem-Blo* SPONGE RUBBER** — Soft — Lively — Extra Good Sealing
(3) **NEOPRENE† Latex COATING** — Resists Oil and Water — Smooth — Good Looking — Long Wearing



Standard diameter sizes 5/16" to 1". Flange widths 5/16" to 1". In black, white, or colors.

Stops air leaks; silences rattles; quiets slamming, absorbs shocks; seals out water, noise, dirt, dust, insects. Used successfully for years by leading manufacturers.
Try it yourself . . . send for free samples and catalog.
†Registered Trade Mark E. I. duPont de Nemours & Company *Registered Trade Mark U. S. Rubber Co. **Write Dept. N-11**

BRIDGEPORT FABRICS, INC., Bridgeport 9, Connnecticut

For more details circle NED-16 L9 on enclosed inquiry slip

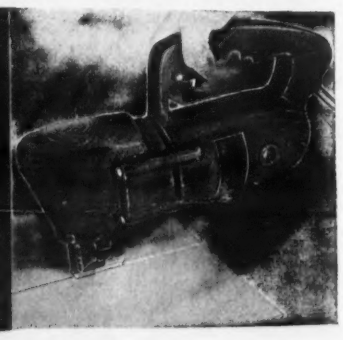
Browning **GEARBELT DRIVES**
COMBINE THE POSITIVE ACTION OF GEARS WITH THE FLEXIBILITY OF BELTS

Here is a versatile new drive that provides high mechanical efficiency, *plus* the inherent flexibility of belts. In scores of applications, Browning Gearbelt Drives offer you many cost-saving advantages: 1) A positive non-slip drive. 2) Steel cable strength member won't stretch, needs minimum take-up. 3) Lower initial belt tension reduces bearing loads, prolongs life. 4) Permits smaller pulleys, shorter centers, narrower belts . . . higher capacity in limited space. 5) Lessens noise and heat. 6) Requires little maintenance, no lubrication. *Investigate new Gearbelt Drives today.* Ask your Browning Distributor for complete information and Catalog GB-201, or write **Browning Manufacturing Company, Maysville, Kentucky.**

Browning POWER TRANSMISSION EQUIPMENT

For more details circle NED-17 L9 on enclosed inquiry slip

CUT METAL *FAST,* WITHOUT DISTORTION USE **MODERN NIBBLERS**



They cut 10 gage stainless, 8 gage mild steel, 7 gage aluminum and brass without bending or curling the metal.

They cut 8" (and smaller) radius.

Models are available for cutting corrugated metal, fibre glass and plastic without cracking or chipping. Other models for cutting wire netting, irregular rods, gaskets, etc.

A MODEL FOR CUTTING ¼" COLD ROLLED STEEL AVAILABLE SOON!

Write, wire or call
MODERN MFG. CO., INC.
678 Davisville Road, Willow Grove, Pa.
Phone: OLdfield 9-4820

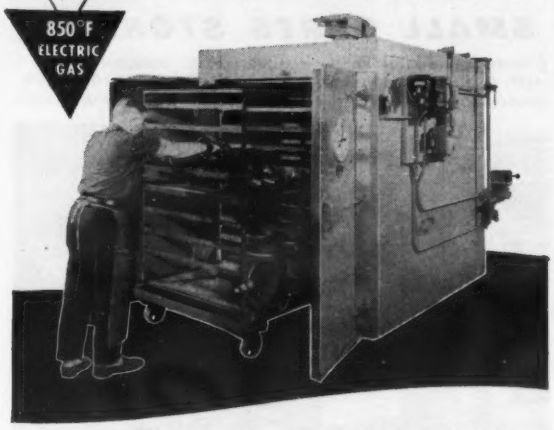
For more details circle NED-18 L9 on enclosed inquiry slip

PRODUCTION OVENS

DESPATCH OVEN CO.

laboratory heat control with horizontal air-flow systems

850°F ELECTRIC GAS



Despatch ovens are excellent for maintaining constant production quality where heat control is important. For example, baking phenolic finishes on coils, stators, etc., finish baking japans, lacquers, enamels or ceramics . . . drying adhesives, dehydrating chemicals, etc. Sizes for laboratory and production operations. Rugged, available in standard and special sizes.

APPROVED SAFETY SYSTEM

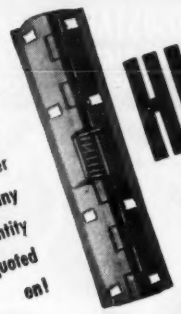
DESPATCH OVEN CO

Write today for bulletin No. 202-10

DESPATCH OVEN CO. 619 S.E. 8th St., Minneapolis, Minn.

▲ For more details circle NED-19 L9 on enclosed inquiry slip ▲

HINGES



from stock or to order . . . any quantity quoted on!

Finest quality . . . for boxmakers, furniture, luggage, electronics and other industries. In any material . . . cold rolled, brass, aluminum, etc.

Compare ADVANCE quality and prices before your next hinge order!

Send your samples for best quotations!

ADVANCE MFG. CO. 183 Water St. Pawtucket, R. I. Phone: PA 5-2991

▲ For more details circle NED-20 L9 on enclosed inquiry slip ▲

Specify Strong Smooth Safe SALEM

COPPER BRAZED

FORMED STEEL PULLEYS

for your power transmission

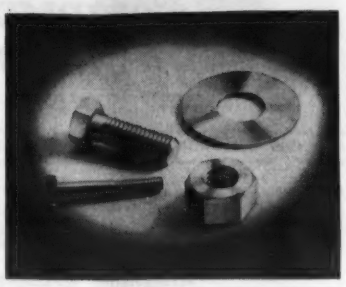
Engineered for Lawn Mowers, Garden Tractors, Compressors, Agricultural and Industrial Equipment. Smooth rolled edges reduce belt wear. Solid steel discs and hubs weather heavy loads and high speeds.

Write for Engineering booklet to help you specify your Pulley requirements.

SALEM STAMPING & MFG. CO., INC.
DEPT. 14 SALEM, OHIO

▲ For more details circle NED-21 L9 on enclosed inquiry slip ▲

TITANIUM FASTENERS
custom made to specifications



Custom manufactured titanium bolts, nuts, and washers are now available to exact tolerances and rigid specifications. Fasteners are strong, light in weight, and exceptionally corrosion-resistant. Company also stocks more than 7000 different types and sizes of fasteners in stainless steel, plus an almost equal number in brass, aluminum, bronze, Monel, and molded nylon. Available from Star Stainless Screw Co., 699 Union Blvd., Paterson 2, N. J.

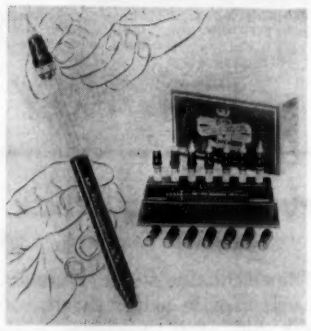
▲ For more details circle NED-22 L9 on enclosed inquiry slip ▲

HEAT INDICATING CRAYONS
check 150 to 1240° F temperatures

Temperatures during welding or heat-treating operations can be checked at stages between 150 to 1240° F by Thermochrom temperature indicating crayons. Mark of crayon changes color when rated temperature is reached. It will not melt away, leaving a permanent record of the heat level reached. Crayon's wrapper shows its point-of-change temperature. Crayon can be used to its full length and costs $2. Made by Curtiss-Wright Corp., Princeton Div., Box 110, Princeton, N. J.

▲ For more details circle NED-23 L9 on enclosed inquiry slip ▲

RULING & LETTERING PEN
uses seven interchangeable points



Model 3065 Rapidograph technical fountain pen comes in a box containing squeeze bottle ink dispenser and seven interchangeable point sections providing No. 00, 0, 1, 2, 3, and 4 line widths. Each point section has its own refillable translucent plastic ink cartridge. Points are changed in a few seconds without getting ink on fingers or work. The drawing, ruling, and lettering pen uses all types of drawing, regular, and acetate ink. The set sells for $18. Made by Koh-I-Noor Pencil Co., Bloomsbury, N. J.

▲ For more details circle NED-24 L9 on enclosed inquiry slip ▲

TWELVE EASY WAYS TO LIFT FROM 3 TO 100 TONS . . .
USE DUFF-NORTON HYDRAULIC JACKS

Designed for ease of operation this rugged, dependable line of Duff-Norton hydraulic jacks gives you rapid rise with minimum effort. Twelve models in 10 different capacities ranging from 3 to 100 tons meet the lifting requirements of all types of industry.

Duff-Norton Hy-Power Hydraulic Jacks are stocked by your distributor. For quick delivery call him the next time you need a jack, or write for a copy of Bulletin AD-16-n to obtain complete details and specifications.

DUFF-NORTON COMPANY
P. O. BOX 1889, PITTSBURGH 30, PA.

▲ For more details circle NED-25 L9 on enclosed inquiry slip ▲

SHOPMOBILE

PAYS FOR ITSELF IN 90 DAYS!

SAVES MANY HOURS OF MAINTENANCE TIME—SAVES TRIPS—SPEEDS WORK

Only $249.00
F.O.B Factory, Cardington, Ohio
Finish Painted, Ready to Operate

TAKE THE WORKSHOP TO THE WORK!

SHOPMOBILE is an all-steel welded workshop on wheels with roomy storage compartments that can be locked and workbench surfaces at working height.

MECHANIZE YOUR MAINTENANCE DEPARTMENTS! WRITE TODAY FOR FULL INFORMATION.

STAHL METAL PRODUCTS, INC.
4750 W. 160th ST. • CLEVELAND 35, OHIO

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For extreme accuracy under heaviest radial and thrust loads...

Specify RED-E ANTI-FRICTION CENTERS

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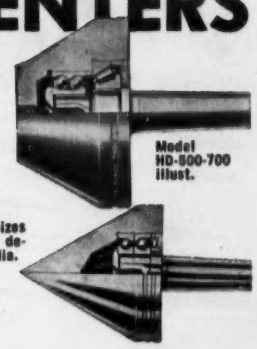
LATHES: 30 MODELS
GRINDERS: 22 MODELS



Model HD-500-700 illust.

Stocked in all standard taper sizes and straight shanks. Immediate delivery on head sizes up to 12" dia.

PIPE

OTHER HEADS AND SHANK SIZES AVAILABLE

FEATURE: 3 & 7 ABEC-SPEC bearings. Heads made of chrome nickel steel, hardened for greater resistance to abrasion wear. HD model has an adjustable bearing assembly with positive locking control.

CALL YOUR DISTRIBUTOR OR WRITE

Center Specialists Since 1908

READY TOOL COMPANY
194 Garfield Ave. Stratford, Conn.

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Cutting with 7200 adjustable strokes per minute, the IDEAL Electric Marker is as easy to use as a pencil. It takes just a few seconds to cut names, stock numbers, part numbers or sizes on parts and equipment on the production line, in warehouses, in toolrooms, or laboratories. Special nameplates may be eliminated since the alloy or diamond points mark directly on anything from hard rubber to steel and glass. It operates on AC current. Sold through leading electrical distributors in America. In Canada: Irving Smith, Ltd., Montreal.

IDEAL

IDEAL INDUSTRIES, Inc.
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PLEASE SEND Catalog data on Electric Marker.

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MELT ICE and SNOW Everywhere

Brooks SNoKLEEN

EASY...ECONOMICAL...FAST...

NO MORE ICE CHIPPING! NO MORE SNOW SHOVELING!

NO MORE WINTER HEADACHES . . . WHEN YOU USE BROOKS SNoKLEEN! . . . 30 times more thawing capacity than salt*.

SNoKLEEN'S small chemical pellets generate intensive internal heat the moment they touch ice or snow . . . start safe, sure melting action.

SNoKLEEN melts far faster than ordinary ice melting compounds . . . remains chemically active for a longer period. Consequently, it melts more square feet of ice per pound of pellets.
*at 5°F.

SNoKLEEN is available in 100 lb. and 300 lb. drums.

BROOKS Chemicals, Incorporated
PLANTS
3304 E. 87th St. Cleveland 27, Ohio • 461 Cumberland Ave., Hamilton, Ontario
Offices in Principal Industrial Cities
SINCE 1876

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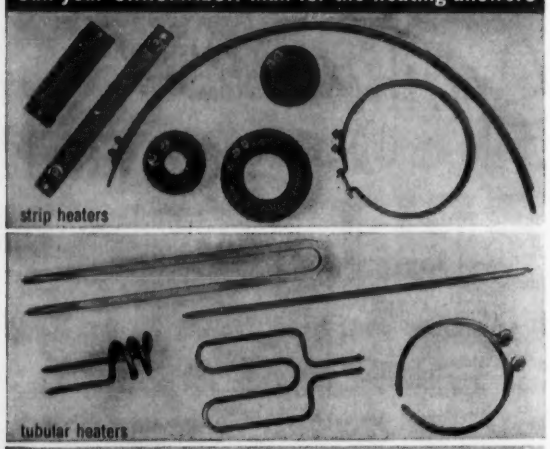
Call your CHROMALOX Man for the heating answers



These 3 basic CHROMALOX heaters provide answers to just about any heating problem

Strip Heaters . . . that quickly and easily bolt or clamp to metal surfaces.

Tubular Heaters . . . that clamp on, fit into machined grooves, cast into metals, immerse in liquids, install in ovens and ducts.

Cartridge Heaters . . . that fit standard drilled holes.

These versatile Chromalox electric heaters come in sheath materials, sizes and wattages to match almost any application to 1100°F. Easy to install, they provide fast, clean, safe, economical heat for limitless applications.

Your Chromalox Man can help you determine the one that best answers your problem. Why not give him a call.

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CHROMALOX
Electric Heat
INDUSTRIAL • COMMERCIAL • RESIDENTIAL
EDWIN L. WIEGAND COMPANY
7509 Thomas Boulevard • Pittsburgh 8, Pa.

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NEW EQUIPMENT DIGEST

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BPA NBP

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resists tearing, flexing, wear

Dimensionally stable Duralam card stock for punch cards used in ledger sheets, rotary files, and index and tub file cards combines paper with DuPont Mylar polyester film in a lamination. Result is a tear and flex resistant product that is tough and long wearing. It permits punching of holes close together with high accuracy and reading. Made by **Dobeckmun Co.**, 3301 Monroe Ave., Cleveland 1, Ohio.

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Handle large sheets and plates easily with Logan BALL PEDESTALS

Wherever large metal sheets or plates are handled—around shears, punch presses or other machines, Logan Ball Pedestals give easy access for working efficiency. They give table-high elevation to sheets, permit workmen to move freely through work areas, and allow turning or moving the sheets in any direction. Ball transfer unit at top of pedestal consists of a large steel ball rotating on a bed of smaller balls, contained in a hardened steel cup. Removable cleaning cap. Write for complete literature.

LOGAN CO., 215 CABEL ST., LOUISVILLE 6, KY.

Logan Conveyors

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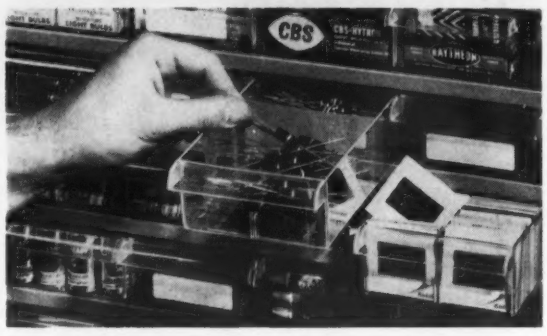
Conserve valuable space, reduce costly "looking" time with Akro-Mils Small Parts Storage Cabinets. 102 Stock models available, others can be built to your specifications.



Complete study in the science of efficient small parts storage for offices, factories, laboratories, homes.

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NEW HIGH SPEED ADJUSTABLE CLOSURES, IN A WIDE VARIETY OF SIZES AND SHAPES, CUT PRODUCTION TIME AND COSTS!

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Snap-Tite® or **Turn-Tite®**

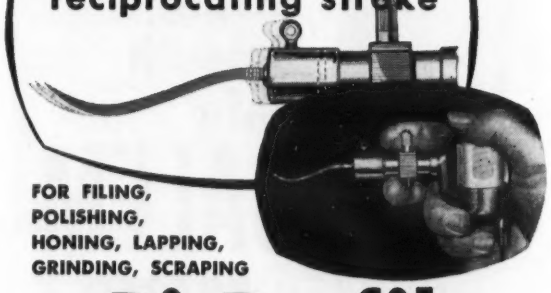
Cam or Lever Action Test Plugs and Seals designed for high production use!

Snap-Tite types for use during processing of machine parts, tubes, molds, castings, tanks and for testing low pressure applications. *Turn-Tite* types for higher pressure applications. Also where restricted clearance prohibits cam action closure. Also types to accommodate pressure line connector. Snap-Tite and Turn-Tite also used as permanent parts of finished products.

Write for catalog
Direct Inquiries to Dept. 31

▲ For more details circle NED-34 L9 on enclosed inquiry slip ▲

use this precise, adjustable reciprocating stroke



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THE Di-Profiler

Flexible Shaft RECIPROCATING TOOL

Saves costly hours of tedious hand labor on concave, convex and flat surfaces — and especially on hard-to-reach details of dies, molds, tools. The fast, precise reciprocating action can be varied from 0 to 100 strokes per second, with length of stroke from 0 to ¼ inch. Moderate in price, the Di-Profiler, with its many versatile accessories, pays for itself quickly through time-saving cost reduction.

Write for free demonstration or illustrated price list DN-119

HYPREZ DIVISION
ENGIS EQUIPMENT COMPANY
431 South Dearborn Street, Chicago 5, Ill.

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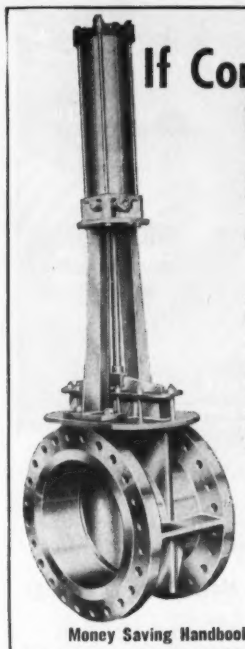
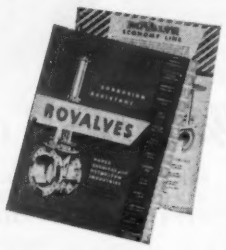


If Corrosive Handling is your business your valve problems are our business

Standard ROVALVES — Stainless Steel, Plastic or Alloys — perform a great variety of corrosion resistant services. In addition, the Rovang plant and staff are well equipped to design custom valves that will solve special corrosion problems. Remote Control or Full Automation, as desired.



Money Saving Handbook

The 1959 Rovalve CATALOG 425 Features an "Economy Line" in a special section, and full information on all Rovalves. If you deal with corrosives, you'll refer to it often. Free on Request.

Write to: W. G. ROVANG & ASSOCIATES, Inc.
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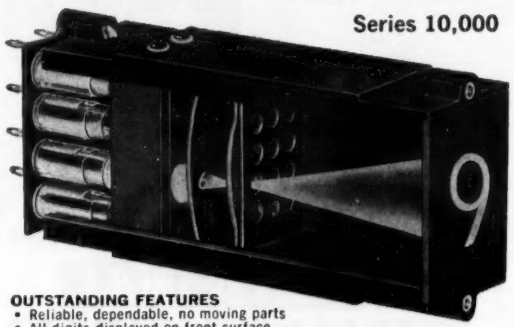
IN-LINE DIGITAL DISPLAY with ONE-PLANE PRESENTATION

Series 10,000



OUTSTANDING FEATURES
- Reliable, dependable, no moving parts
- All digits displayed on front surface viewing screen
- All digits uniform in size and intensity
- High-contrast viewing screen insures utmost visual sharpness
- Digit style of your choice to complement manufacturer's original equipment
- Colored digits of your choice for special environmental lighting
- Individual units may be assembled in groups for convenient panel mounting
- Dimensions: 1 9/16" wide, 2 5/8" high, 5 5/8" long

PRICE PER UNIT **$18.00**
Quantity Prices on Request

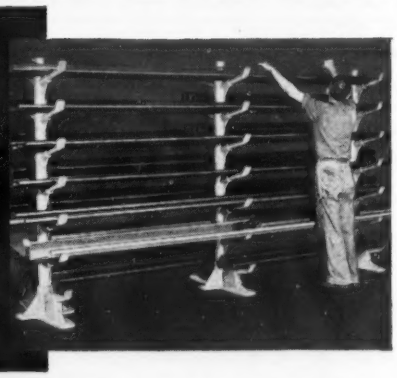
WRITE TODAY FOR COMPLETE DETAILED SPECIFICATIONS

Representatives in principal cities

INDUSTRIAL ELECTRONIC ENGINEERS, Inc.
Engineers and Manufacturers of Fully Automatic Systems and Machines
3973 Lankershim Blvd., North Hollywood, Calif.

▲ For more details circle NED-41 L9 on enclosed inquiry slip ▲

SAVE SPACE • SAVE TIME



Store and remove stock quickly—either by hand, fork truck or overhead crane—using the proved Brown Method for efficient storage. Brown Stock Racks, spaced as required, store more in less space . . . reduce handling from a long end haul to a short lateral movement. Stock is quickly visible for fast selection . . . easily accessible from the sides or ends.

Very low installation costs . . . all components are slip-fitted . . . no bolting or tools needed. Base brackets, trays and other accessories are available to increase usefulness. Both single arm wall racks and double arm racks are available.

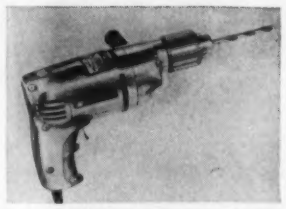
Brown Engineering Co., 129 N. 3rd St., Reading, Pa.

■ Get complete data on Quick-Serve Racks. Write today for bulletin.

BROWN FLEXIBLE STOCK RACKS

▲ For more details circle NED-42 L9 on enclosed inquiry slip ▲

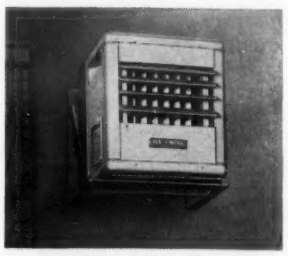
HEAVY DUTY ELECTRIC DRILL has 3/8-in. capacity in mild steel



Weighing only 5 lb, Model 538 heavy duty electric drill features a 3.5 amp motor, three-stage gear reduction, and a leakproof gear box. Drill has 3/8-in. capacity in steel and 3/4-in. in wood. The 10-ft strain relief cord has a three-pronged connector. Auxiliary side handle provides extra control and leverage. Drill is furnished with a chuck key, key holder, and operating manual. It operates on 115-v ac or dc. Made by **Porter-Cable Machine Co.**, 111 Seneca St., Syracuse 4, N. Y.

▲ For more details circle NED-43 L9 on enclosed inquiry slip ▲

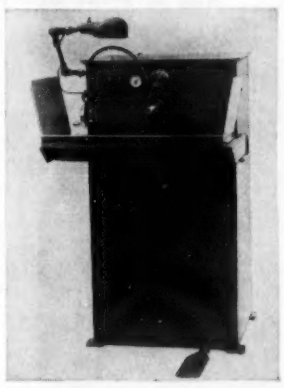
UNIT HEATERS 11 capacities up to 300,000 Btu



Flexitemp control system embodied in Reznor line of suspended unit heaters virtually eliminates hot air blasts. A sensitive low voltage anticipating thermostat is combined with a two-speed motor and an automatic fan speed selector which operate independently of the burner controls. Result is a steady, gentle flow of warm air which eliminates room temperature fluctuations. This control is offered in heaters of 11 capacities from 25,000 to 300,000 Btu. Made by **Reznor Mfg. Co.**, Mercer, Pa.

▲ For more details circle NED-44 L9 on enclosed inquiry slip ▲

HONING MACHINE has infinitely variable speeds



Production, tool room, and salvage work can be performed on the Model J2 honing machine. Its drive, motor, and coolant tank are enclosed in the ventilated steel base. Machine has infinitely variable spindle speeds from 225 to 525 rpm, and an optional range of 450 to 1050 rpm. It is powered by a 1/2-hp, 110-v, 60-cycle, single-phase motor. Additional features are tray top, sealed ball bearing spindle, splash guards, and antisplash screen in the coolant tray. Optional equipment includes dial indicator, extension tray, and filter tray. Price is $495. Made by **Superior Hone Corp.**, 1613 Elreno St., Elkhart, Ind.

▲ For more details circle NED-45 L9 on enclosed inquiry slip ▲

Aftercooler and Cyclone Separator designed for cleaner, dryer compressed air

The Adams Aftercooler and Cyclone Separator are designed to efficiently condense and remove water from compressed air and process gas. Condensed moisture and entrained dirt and oil are subsequently removed in a cyclone type separator. This unit is scientifically designed for maximum removal efficiency over a wide range of flow rates.

For normal use, units are available to cool gases to within 10° F of the temperature of the cooling water. Specially designed units are available to permit a 2° F approach to cooling water temperature, for application where low moisture content is critical.

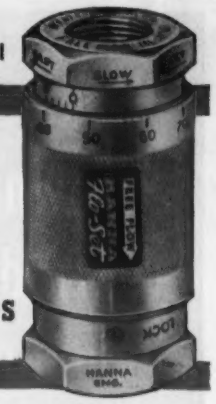
Adams Aftercoolers and Separators are available from stock to handle 20 - 40,000 cfm with 10° cooling and 25 - 19,200 cfm where it is necessary to cool within 2°F of the cooling water. Special units can be supplied to suit an unlimited range of requirements. In all cases the maximum pressure loss at rated capacities is 1/2 psi.

This wide range of sizes enables the economical utilization of Adams Aftercoolers and Separators in virtually all industrial application. For further information on how R. P. Adams' units will solve your compressed air problems and save you money, write today for Bulletin 711. R. P. Adams Co., Inc., 227 East Park Drive, Buffalo 17, New York. *Advt.*

▲ For more details circle NED-46 L9 on enclosed inquiry slip ▲

The answer to precision speed control

HANNA Flo-Set Speed Control Valves



■ For precision control of cylinder speeds, Hanna offers a line of Flo-Set Valves 1/4", 3/8", 1/2" and 3/4". Micrometer graduations in hundredths of a revolution permit precision regulation of flow. Speeds of forward and reverse piston strokes may be independently controlled. For light piping and tubing, there's a 1/4" Flo-Set Jr. Valve, without micrometer markings.

Hanna Flo-Set Valves are suitable for air, oil or water control, with maximum pressure to 250° p.s.i. and temperature to 250° F. They may be mounted in any position.

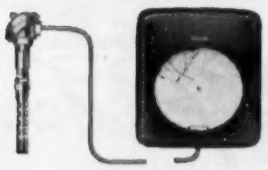
WRITE FOR FREE NEW BULLETIN 253A
It gives complete details and specifications on Hanna Flo-Set Valves.

Hanna Engineering Works
HYDRAULIC AND PNEUMATIC EQUIPMENT • CYLINDERS • VALVES • RIVETERS
1759 Elston Avenue • Chicago 22, Illinois

▲ For more details circle NED-47 L9 on enclosed inquiry slip ▲

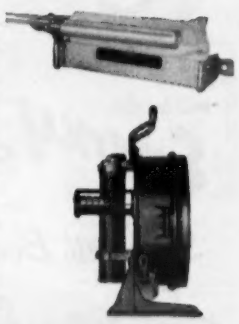
WIDEST RANGE OF EQUIPMENT FOR

HUMIDITY RECORDING



No matter what problems you face in obtaining suitable humidity measurements and records, the unique versatility of Foxboro Humidity Instrumentation offers an appropriate solution . . . recorders, recording controllers, and indicators for relative humidity (hygroscopic type) and wet-and-dry bulb measurements, and, using the exclusive Dewcel element, direct reading dewpoint and absolute humidity measurements. Available in portable, close-coupled and long-distance types; with round or rectangular cases.

Get the complete story in Bulletins 11-11A and 11-14A. The Foxboro Company, 6611 Neponset Avenue, Foxboro, Mass., U.S.A.



FOXBORO HUMIDITY INSTRUMENTS

▲ For more details circle NED-48 L9 on enclosed inquiry slip ▲

FREE HANDBOOK!

brings you the latest facts about fastening with rivets . . . tells you how and why riveting speeds assembly at lower cost.

TO GET YOUR COPY, ATTACH COUPON TO YOUR LETTERHEAD

JUDSON L. THOMSON MANUFACTURING COMPANY
125 SAWYER ROAD, WALTHAM 54, MASSACHUSETTS

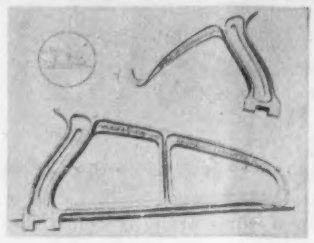
Please rush your new handbook, "COST-CUTTING FACTS ABOUT FASTENING WITH RIVETS."

Name_____ Title_____
Company_____
Address_____
City_____ Zone_____ State_____

▲ For more details circle NED-49 L9 on enclosed inquiry slip ▲

▲ For more details circle NED-50 L9 on enclosed inquiry slip ▲

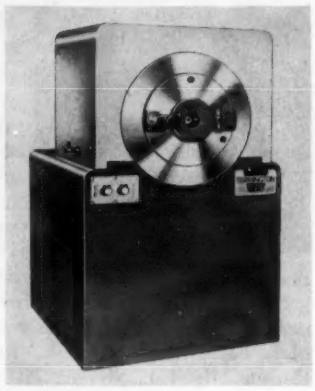
ALUMINUM FILE HANDLES
two sizes hold any size file



Cast aluminum Safe-T-Grip file handles are offered in two sizes to fit any size or make of mechanic's files. The entire file surface from tip to tang can be used. Files are easily inserted or removed with a gentle tap. Used like a plane, handles assure uniform file pressure on work for fast, smooth cutting and eliminate cramped hand muscles and injured knuckles. Made by **M-M-A, Inc.**, Lancaster, Pa.

▲ For more details circle NED-52 L9 on enclosed inquiry slip ▲

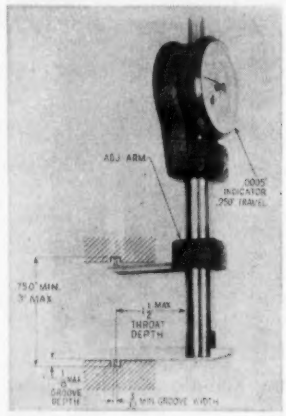
SWAGING MACHINE
for steel, aluminum, and brass



Expanded line of Torrington rotary swaging machines now includes this pointer for steel, aluminum, and brass mill applications. It will point solid stock ranging up to ½-in. diameter and tubular material up to 1½ in. Dies are quickly changed. Base price is under $2900. Made by **Torrington Co.**, Swaging Machine Div., Torrington, Conn.

▲ For more details circle NED-53 L9 on enclosed inquiry slip ▲

INTERNAL GROOVE GAGE
has 2¼-in. diameter range



Easy to handle by skilled or unskilled personnel, this dial gage for checking internal grooves is suited for patrol inspection, at-the-machine gaging, or for use with an optional comparator stand. The easily adjusted dial indicating gage has a 0.0005-in. indicator and 2¼ in. of diameter range adjustment. Several design variations can be employed for unusual or intricate internal groove gaging. Made by **Boice Gages, Inc.**, Boice Road, Hyde Park, N. Y.

▲ For more details circle NED-54 L9 on enclosed inquiry slip ▲

PACKLESS® Flexible Metal Hose & Fittings

MATERIALS—BRONZE, STAINLESS AND CARBON STEEL
SIZES —1/4" THRU 6" I.D.
FITTINGS —BRAZED, MECHANICAL, SOLDERED.

Send for Bulletins FL & IND. 4

PACKLESS METAL HOSE INC.

730-39 South Columbus Ave., Mt. Vernon, N. Y.

▲ For more details circle NED-56 L9 on enclosed inquiry slip ▲

The rugged, accurate, and flexible instant reset dial set timer will operate alone for timed interval or time delay or in sequence to control the most complex process cycle . . . synchronous motor driven in 13 timing ranges from 60 cycles full dial to 60 hours . . . in any mounting or enclosure or as a complete center.

Write for Bulletin 203

National Time & Signal Corp.
21800 Wyoming • Detroit 37, Mich.

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SEND FOR: **FREE INDUSTRIAL CATALOG**

RUSCOE **Epoxy** CEMENT and FILLER

Strongest Bond Known

B.F.Goodrich **INDUSTRIAL CEMENTS**

A full line of rubber base cements. Any quantity. Any size. Ready to ship.

RUSCOE **SOLVENTS**

- Methyl ethyl kentone (MEK)
- Acetone
- Mineral Spirits
- Lacquer thinner

ALL AVAILABLE IN STANDARD INDUSTRIAL SIZES.

DISTRIBUTORS: HERE IS A VALUABLE LINE FOR YOU!

W. J. RUSCOE CO.
475-485 Kenmore Blvd. Akron 1, Ohio

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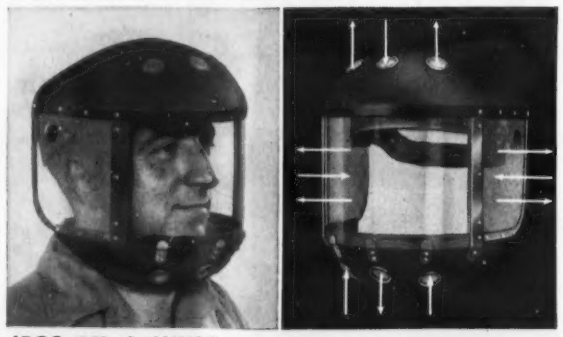
FOR SAFETY ON THE JOB . . . FOR SURE



IPCO TEL-A-SHIELD design offers maximum face and head protection from flying metal and glass for workers engaged in chipping, grinding, scaling, metal sawing, spot welding and similar operations. Vulcanized black fibre construction incorporates brass screen ventilating grommets top and bottom. Galvanized wire screen sideshields provide cross ventilation and audibility. Easily replaceable broad vision window is cellulose acetate, extra heavy gauge for impact resistance. IPCO has the *correct* eye, face and head protection for every job requirement. Write for complete catalog.

- BROAD VISION
- MAXIMUM COVERAGE
- LIGHT WEIGHT
- CROSS VENTILATION
- AUDIBILITY

Complete line of masks, hoods, respirators, helmets

Reg. U.S. Pat. Off.

IPCO SAFETY PRODUCTS
INDUSTRIAL PRODUCTS COMPANY
2807 N. Fourth Street • Philadelphia 33, Pennsylvania

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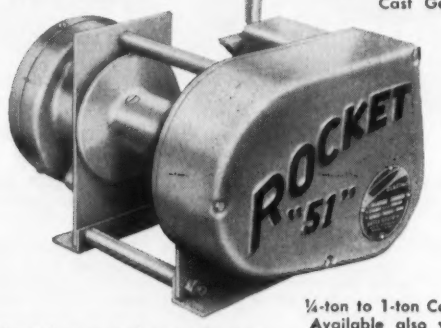
David Round **Winches**

Capacities— Standard Models, from 500 lbs. to 5-tons. Larger sizes engineered to specs.

Electric — All-Steel, Spur-Geared Machine Cut Teeth. Reversible, Ball-Bearing. Push-button Controls.

Worm Geared, Hand-Powered Winches — Bronze, Cut-steel or Cast Gears.



¼-ton to 1-ton Cap'y. Available also with Air Motor.

Efficient, low cost, handy power for a wide variety of hoisting and pulling jobs. Mechanically rugged, completely safe. For use with either 110 or 220 Volt, single or three-phase currents. Ask your distributor or write for catalog Bulletin 95-WI-5A.

DAVID ROUND & SON, INC., CLEVELAND 22, OHIO

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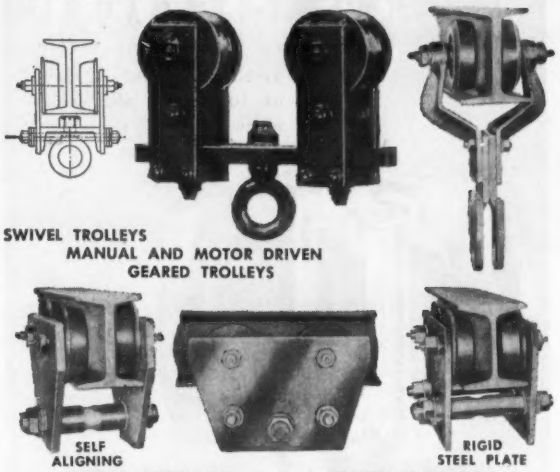
PLAIN • GEARED • FLANGED
BALL OR ROLLER BEARING WHEELS

MACHINED CROWN — FLAT — TAPER TREADS — COMPLETE WITH SOLID — THRU — REMOVABLE AXLES — GREASE FITTING — THOROUGHLY SEALED



HOIST TROLLEYS • GUIDE ROLLERS
BRIDGE CRANE END TRUCK ASSEMBLIES

STANDARD AND SPECIAL PRODUCTS BY GREY HUB ARE USED BY LEADING MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT IN EVERY INDUSTRY

GREY HUB TROLLEY WHEEL CO.
MANUFACTURERS SINCE 1921
17265 Gable Avenue • Detroit 12, Mich., U. S. A.

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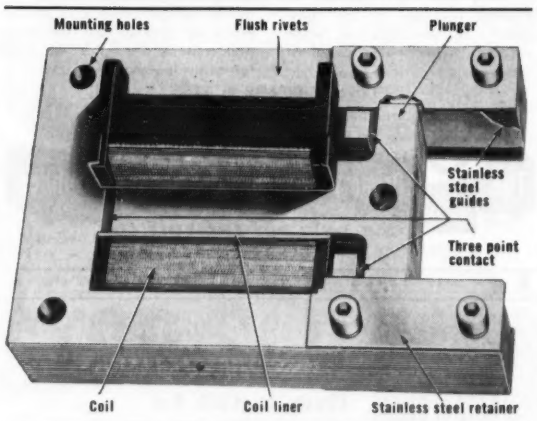
TROMBETTA SOLENOID CORP.
MILWAUKEE WISCONSIN
U.S.A
329 N. Milwaukee Street • Phone BRoadway 1-8347

NA-700 LINE OF SOLENOIDS
The ultimate design in Guided T Plunger Solenoids

Patented March 10, 1959
Developed in 1952
Patent No. 2,877,390

WE DESIGNED THEM!
WE DEVELOPED THEM!!
WE PATENTED THEM!!!
THEY ARE OURS!!!!



No clatter! No chatter!!

FEATURES
Positive three point contact
Heavy stainless steel guides

RESULTS
Longest life expectancy; reliable operation throughout entire life; silent operation in sealed position; mountable in any position, at any angle; no heavy grease required to cover up poor design; no grunting when mounted horizontally.

AVAILABLE
In a multitude of standard sizes, pull or push type; also custom built to satisfy customer's requirements; also for OEM, and replacement trade.

TROMBETTA has the original solenoid. Don't let anyone sell you imitations. Request additional information.

"TROMBETTA"
is the answer to:
ALL SOLENOID QUESTIONS

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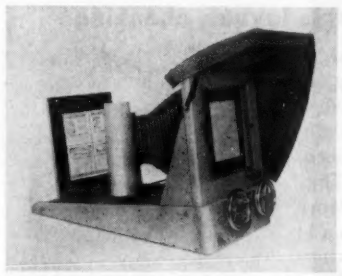
HIGH PRESSURE FILTER
for air, water, gas, or oil

Designed to operate up to 2000 psi, this filter has a built-in automatic bypass relief valve to assure steady flow when filter clogging causes a 15-psi pressure drop. Unit is applicable to air, water, gas, or oil filtration and uses one, two, or three filter cartridges of 5, 25, 50, or 75 microns. Felt cartridges impregnated with phenolic resin are quickly changed without interrupting flow by releasing the hammer union fitting. Inlet and outlet process connections are 1 in. NPT, and drain connection is ½ in. NPT. Made by **Instruments, Inc.**, Box 556, Tulsa, Okla.

▲ For more details circle NED-61 L9 on enclosed inquiry slip ▲

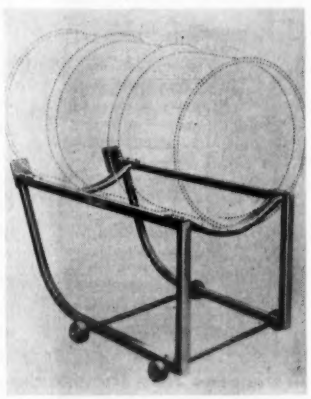
DESK TOP VISUALIZER
enlarges and reduces 400 per cent



Coronet desk type visualizer will enlarge and reduce objects and opaque copy 400 per cent for study or copying. The lightweight unit has a 10 x 12-in. viewing area and a 12 x 14-in. copyboard. Camera is 28¾ in. long, 21½ in. high, and 14½ in. wide. Price is $177. Made by **Lacey-Luci Products, Inc.**, 31 Central Ave., Newark 2, N. J.

▲ For more details circle NED-62 L9 on enclosed inquiry slip ▲

BARREL DRAIN TRUCK
equipped with wheels and casters



Quickly assembled with 16 bolts, the Model 4838 knocked-down barrel drain truck is engineered for accurate balance in the handling of heavy drums and barrels. Casters and wheels afford mobility. Model 4838-K4 has four 2½-in. diameter, 1-in. face wheels and Model 4838-K22 has two such wheels and two 50-A Series pressed steel casters. Capacity is 800 lb. Made by **Bond Foundry & Machine Co.**, Dept. BD, 306 Penn St., Manheim, Pa.

▲ For more details circle NED-63 L9 on enclosed inquiry slip ▲

Available in Stainless Steel, Silicon Bronze, Brass, Aluminum and Steel

JACOBSON NUT MFG. CORP. Kenilworth, New Jersey

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CABLE MARKING
PREVENTS ERRORS

Safely and Permanently
- MARKS
- BINDS
- COLOR CODES
- INSULATES
- TEMPERATURE RATINGS UP TO 300° C

If you have a cable marking or strapping problem . . . send today for samples and catalogues to . . .

HELLERMANN CORPORATION
701 SENECA ST. • BUFFALO 10, N.Y.

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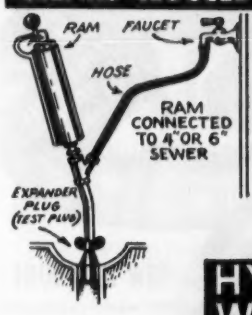
CLEARS CLOGGED DRAINS in Seconds!



The ideal plumbing service tool. Can pay for itself in one application!

Smashes through the most stubborn blockages, then flushes clean — all in one operation!

Comes equipped with self-contained manual compressor (can charge Ram to 100 lbs. in 30 seconds!) and drain adapters in 6 sizes!

HYDRAULIC WATER RAM

Anyone can operate it! Thousands already in use, have saved *millions* of dollars in industry and institutions. Why lose time, suffer inconvenience, waste dollars needlessly on either completely blocked or slow-moving sewers, drains, fixtures? The HYDRAULIC WATER RAM clears severest stoppages with SPLIT-SECOND HYDROSTATIC IMPACT! . . . Shatters blockage, then flushes clean. No snakes, chemicals, cables. No pushing through. Works perfectly, *vent or no vent!* Nothing to wear out. You risk nothing on our 30 day free trial offer, at our expense. Write for details.

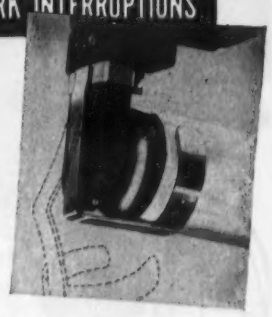
Works perfectly with all clogged fixtures, toilets, sinks, urinals, etc. Equipped with 4" rubber cone, ideal for toilets, plus set of 5 tapered adapter plugs for other drains or sewers.

Write for Information, Prices, Free Trial Offer — Today!
HYDRAULIC MANUFACTURING CO.
214 INDUSTRIAL HEIGHTS KIEL, WISCONSIN

▲ For more details circle NED-66 L9 on enclosed inquiry slip ▲

STOP! INJURIES AND WORK INTERRUPTIONS

from falling fluorescent-tube accidents



Fluorescent tubes sometimes fracture. Vibration and shock may release them from fixtures. Wherever fluorescent lighting is installed there is the possibility of physical injury and property damage resulting from falling tubes.

Don't wait for accidents to happen. For a few cents each you can keep tubes in place, prevent falling, insure against poisoning, contamination and spoilage, avoid injuries, work interruptions and loss of time.

Install Den-El fluorescent lamp guards, easily and quickly, with a screw driver. Permanent, positive protection. Stainless steel. Easily sprung aside for relamping or cleaning. Two guards for each lamp.

Types for all fixtures, also tubes in series
For 40W tubes, per C **$19.00**
For 100W tubes, per C **$22.50**

ORDER TODAY DIRECT
Ask for bulletin, also complete General Scientific catalog of hundreds of other safety equipment items
All orders shipped promptly from Philadelphia

GENERAL SCIENTIFIC EQUIPMENT CO.
7518 Limekiln Pike, Phila. 50, Penna.
HAncock 4-1550
SAFETY EQUIPMENT FOR EVERY HAZARD

▲ For more details circle NED-67 L9 on enclosed inquiry slip ▲

Special goggles provide safety for workmen, relieve tired eyes.

FOG-PROOF GAS-TIGHT GOGGLES

Hug face securely but comfortably. Can be worn with any respirator. Fog is removed from the lenses by an easy nod or shake of the head. A few drops of water on inner wall of lens do the trick.

COVER goggles and respirators are known world over for reliability. Send for literature.

See your safety equipment supplier or order your sample direct — $2.00 postpaid. Write today.

H. S. COVER
Dept. 1105 South Bend 14, Indiana
"Respirators for Industry Since 1894"

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NOW!
Branded for lifetime identification

HOW IT'S DONE: The mark is embossed onto, not stamped into, the chain.

CHAIN BUYERS & USERS—Now you can be sure of the make of chain you are getting and of the grade (strength) of the chain you are using...a definite safety advantage. Available on Inswell Proof Coil, BBB, High Test and the ½" and smaller sizes of Herc-Alloy chain.

SPECIFY "CM" CHAIN

CM CHAIN

COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
Regional Offices: NEW YORK
CHICAGO • CLEVELAND
SAN FRANCISCO • LOS ANGELES

In Canada: McKinnon Columbus Chain Limited, St. Catharines, Ont.

▲ For more details circle NED-69 L9 on enclosed inquiry slip ▲

helps prevent colds

Production line and office workers can now work in absolute comfort

The new low-priced ELECTRO MAT throws off a gentle warmth that keeps workers healthy, happy and comfortable. 14" x 21" portable foot warmer is safe and economical . . . consuming less power than a 100 Watt light bulb. It is made of high quality oil-resistant rubber.

Attention Employers

Increase the efficiency of your employees and help prevent colds which cause absenteeism. Equip each employee with an Electro Mat.

IMPORTANT SAVING: If 6 or more Electro Mats ordered price is only $6.95 each.
Please send me: ☐ Electro Mat at $7.95 each.
Enclosed is my check ☐ money order ☐
☐ C.O.D. I am enclosing $1.00. Will pay postman balance of $6.95 plus C.O.D. fee.

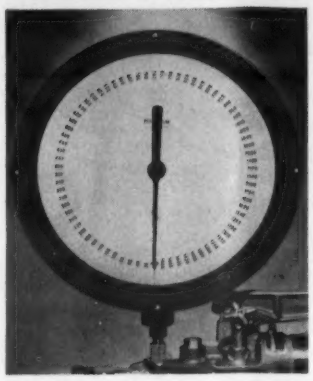
Name _____
Street _____ Zone _____
City _____ State _____

Mail check or money order today
Only $7.95 Delivered

10 Day Money Back Guarantee
Interstate Rubber Products Corp., Dept. 303
906 Avila St., Los Angeles 12, California
Dealer Inquiries Invited. 9108 Meyers Rd., Detroit 28, Michigan

▲ For more details circle NED-70 L9 on enclosed inquiry slip ▲

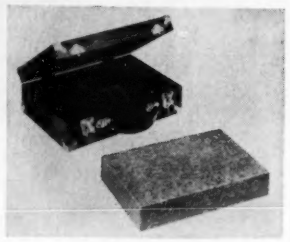
TEST GAGE
has 360-degree linear dial



Improved test gage with 360-degree linear dial has accuracy within 0.15 per cent. The 12-in. diameter dial gives the equivalent scale length of a 16-in. 270-degree dial. Gages have Bourdon tubes of high nickel steel which are heat treated for zero modulus of elasticity over temperature range of −50 to 150° F. A tube tip bleed for purging and flushing the tube is standard. Capacities from 15 to 60,000 psi are available. Made by Martin-Decker Corp., 3431 Cherry Ave., Long Beach 7, Calif.

▲ For more details circle NED-71 L9 on enclosed inquiry slip ▲

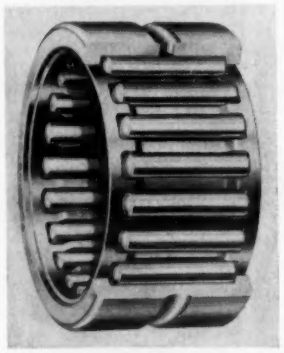
TOOLMAKERS' FLATS
for small parts layout, checking



Mt. Airy gray granite, Balfour pink granite, or black diabase are used in the toolmakers' flats, finished to a surface accuracy of 0.0001 in. They are suited for layout work and checking of small parts. A sturdy, leatherette covered, felt lined case protects flat when not in use. Size is 12 x 8 x 2 in. Made by Herman Stone Co., 1860 N. Gettysburg Ave., Dayton 7, Ohio.

▲ For more details circle NED-72 L9 on enclosed inquiry slip ▲

ROLLER BEARINGS
cage design allows high speeds



Cage design utilized in HJ Series of channel-shaped outer ring roller bearings allows their use at high speeds. Made in ¾ to 4-in. bore sizes, bearings can be applied directly to hardened and ground shafts, or used with inner rings. Roller guidance takes place at the ends of the rollers and at the pitch line. Roller ends are slightly smaller in diameter than the middle, preventing stress concentration at the ends and insuring uniform load distribution. Made by Torrington Co., Torrington, Conn.

▲ For more details circle NED-73 L9 on enclosed inquiry slip ▲

Only BUSCHMAN has it!

IN-STOCK *delivery on a* **COMPLETE** *range of roller & wheel conveyors*

Available for light use, medium & heavy duty

LIGHT—#138 Rollers. Rust resistant. For low cost carton handling. 12" to 18" widths.
MEDIUM—Aluminum, steel: wheel or roller. QUICK-EEZ couplings. 12", 15" & 18" widths.
HEAVY—#190 Rollers. High capacity handling. 15", 19" & 25" widths.

Write today for literature.

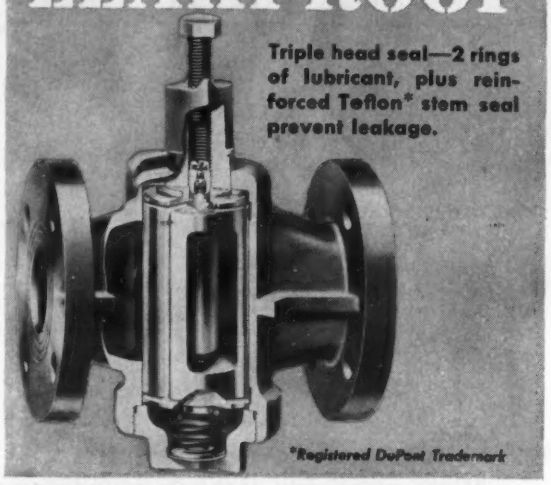
Every Way Better EWB

THE E. W. BUSCHMAN CO.
4482 Clifton Avenue, Cincinnati 32, Ohio
C-356-EWB

CONVEYORS FOR EVERY INDUSTRY

▲ For more details circle NED-74 L9 on enclosed inquiry slip ▲

In the spots that count . . .
HOMESTEAD® VALVES ARE
LEAKPROOF

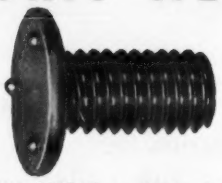


Controlled, pressurized lubrication system forces full lubricant seal around ports, and over all sealing surfaces—positively prevents sticking. Write today for full details.

HOMESTEAD VALVE MANUFACTURING COMPANY
P.O. Box 84 • Coraopolis, Pa.

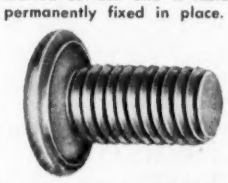
▲ For more details circle NED-75 L9 on enclosed inquiry slip ▲

OHIO WELD SCREWS



GW SCREWS — Used where design requires a smooth unmarred surface and a fastener permanently fixed in place.

HH SCREWS — Used where a single, button-type projection is required when welding to curved surfaces, to heavy sheet 3/32" or thicker, or to ends of rods.



RW SCREWS — Used where a hermetic seal is required to prevent leakage of air, gas, water, oil or dust, or when welding to perforated metal or wires.

HW SCREWS — Used where a self-locating through bolt is required to be fixed securely in place so that it will not turn and a flush surface is required for attaching mating parts.

Thread Size 6-32 to ⅜-16
Samples and information available upon request.

The OHIO WELD FASTENERS Primary Fastener in Fastener Assemblies

THE OHIO NUT AND BOLT CO.
14 FIRST AVENUE, BEREA, OHIO

▲ For more details circle NED-76 L9 on enclosed inquiry slip ▲

THE MARK OF QUALITY
BARBER COLMAN
Wheelco Instruments

Wheelco offers the best in temperature-sensing devices

Wheelco-Land Radiation Pyrometers — High sensitivity and rugged construction are combined in Wheelco-Land radiation pyrometers for applications to 5000°F and higher. Readings are obtained quickly, remain constant even though size of hot object increases. Wheelco potentiometer-type instruments can be used with all models, 400 Series millivoltmeter controllers with many types. Get details in Bulletin F-9285.

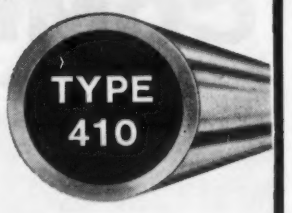
Thermocouples — Prompt shipments from stocks available for wide range of standard units. Special designs are available for temperatures ranging up to 3000°F. More facts are available in 42-page data book.

Optical Pyrometers — For details on the application of optical pyrometers write Wheelco direct or contact your nearby Wheelco field engineer.

BARBER-COLMAN COMPANY
Dept. W, 1514 Rock Street, Rockford, Illinois
Export Agent: Ad Auriema, Inc., New York

▲ For more details circle NED-77 L9 on enclosed inquiry slip ▲

LOW-COST CORROSION CONTROL...



Stainless Tubing & Pipe

Excellent corrosion resistance to crude oil, gasoline, alcohol, ammonia, carbonic acid, mine water and other reagents is provided by this general-purpose straight chrome tubing and pipe. It's scale free in continuous service to 1200°F, has high tensile strength and good fabricating and welding properties. Lowest cost of all stainless tubing and pipe, Type 410 is a standard Carpenter product available in a full range of sizes and gauges. It's now widely used in heat exchangers, for bubble cap risers and other equipment parts.

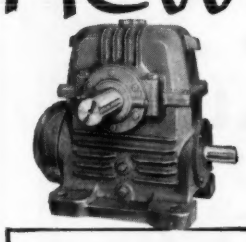
Send for this new bulletin

Contains chemical, physical, mechanical, high temperature and working properties of Type 410 tubing and pipe, and other helpful data. Ask for Bulletin D.B. 410 and prices on specific sizes and quantities for your needs.

THE CARPENTER STEEL COMPANY
Alloy Tube Division • Union, N.J.

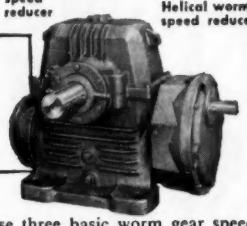
▲ For more details circle NED-78 L9 on enclosed inquiry slip ▲

new LINK-BELT fan-cooled worm gear speed reducers

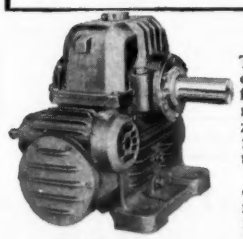


Single worm gear speed reducer

Helical worm gear speed reducer



broadest line in industry



Double worm gear speed reducer

These three basic worm gear speed reducers are available in many variations for any right-angle speed reduction need. Single or double reduction, horizontal or vertical mountings . . . ratios from 5:1 to 3600:1, torque ratings up to 135,000 pound inches, up to 150 hp.

Compact, self-lubricated and fan-cooled, these units offer high ratings, maximum heat dissipation, minimum maintenance. Call your nearby Link-Belt district office or authorized stock-carrying distributor. 15,281

BOOK 2824 contains complete data. Write Link-Belt Company, Prudential Plaza, Chicago 1, Ill.

LINK-BELT SPEED REDUCERS

▲ For more details circle NED-79 L9 on enclosed inquiry slip ▲

STOP SLIPPING ON FLOORS, RAMPS, STEPS, CATWALKS...trowel on Flintdek*!

- Available in tile red, green, blue, cement gray and high visibility yellow for all walking areas.
- Resists water, gasoline, oil, alcohol, fats, dilute acids and alkalies.
- Doesn't chip, crack or peel over metal, wood or concrete. Covers 50 sq. ft. per gallon.

For particulars on Flintdek safety coating write: The Flintkote Company, Industrial Division, 30 Rockefeller Plaza, New York 20, N. Y.

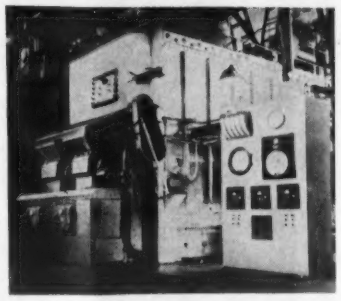
*Reg. U.S. Pat. Off.

FLINTKOTE

Manufacturer of America's Broadest Line of Building Products

▲ For more details circle NED-80 L9 on enclosed inquiry slip ▲

PACKAGED STEAM GENERATORS
coal-fired units rated to 250 psi



Packaged steam and power generators are now offered in coal-fired units rated 43,000, 50,000, and 63,000 lb of steam per hour with pressures up to 250 psi. The highly flexible, semiautomatic units operate smokelessly on a variety of fuels. Changeover from coal to oil takes 7 hr. Furnace, boiler, and economizer package measures 25 x 12 x 9 ft and weighs about 100,000 lb. A test unit has been operating continuously at 54,000 lb per hour with efficiencies of more than 80 per cent. Made by **Foster Wheeler Corp.**, 666 Fifth Ave., New York 19, N. Y.

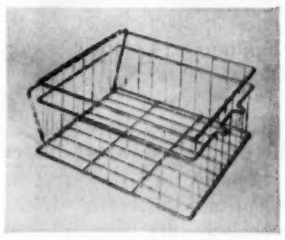
▲ For more details circle NED-81 L9 on enclosed inquiry slip ▲

LP-GAS SALAMANDER
has automatic safety shut-off

Heat output of the Model 200 Lp-gas salamander is adjustable up to 85,000 Btu per hour. It features a furnace type burner with double primary air injection which contributes to fuel economy. The automatic safety shut-off incorporates a pilot burner. Heat is controlled with a throttling valve. Made by **Wemco Products**, 733 E. Nine Mile Rd., Hazel Park, Mich.

▲ For more details circle NED-82 L9 on enclosed inquiry slip ▲

WIRE BASKETS
for wide variety of uses



Large or small wire mesh or expanded metal are available in these small parts baskets for overhead conveyor use. Additional basket types are made for dipping, material handling, plating, degreasing, and other industrial uses. Certain sizes are available from stock and any type or size can be made to specifications. Made by **Metropolitan Wire Goods Corp.**, N. Washington Street & George Avenue, Wilkes-Barre, Pa.

▲ For more details circle NED-83 L9 on enclosed inquiry slip ▲

CHECK CORROSION OF YOUR BUILDINGS, STRUCTURES

with Flintkote Asphalt Protective Coatings!

Be sure of longest term durability with ASPHALT BASE CLAY EMULSIONS. *They are specially formulated to meet your most exacting requirements.*

Types:
- C-13-E (non-fibrated) brush or spray applied
- C-13-C4 (lightly fibrated) brush applied
- C-13-A (heavily fibrated) trowel applied
- C-13-HPC (primer-general coating) brush applied

Finish these coatings with Flintkote Aluminum Paint or DECORALT† latex seal in colors for light reflection.

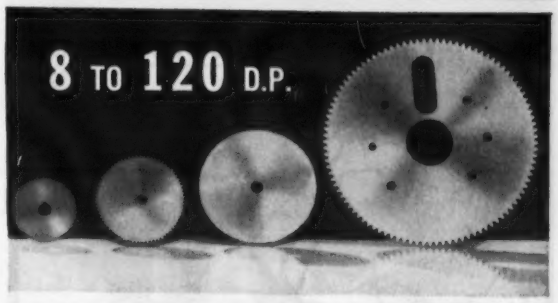
For complete information write: The Flintkote Company, Industrial Division, 30 Rockefeller Plaza, New York 20, N. Y.

†A trademark of the Flintkote Company

FLINTKOTE

Manufacturer of America's Broadest Line of Building Products

▲ For more details circle NED-84 L9 on enclosed inquiry slip ▲



LONG LIST OF STOCK GEAR DIES OFFERS YOU BIG SAVINGS!

ACCURATE STAMPED GEARS by *WINZELER* are BIG savers of time and money. Single stampings are laminated to wide faces at savings up to 60%! Further economies are made possible by a BIG range of *stock* Dies. Modern new plant, methods, and equipment now greatly increase production speed, efficiency and *economy!* Send blue prints. Tell us about your needs today. No obligation.

SEND FOR...

New list of WINZELER-made stock Gear Dies. Ask for it on company letterhead, *please!*

WINZELER Stamped Gears

WINZELER MANUFACTURING & TOOL CO.
7355 W. WILSON AVENUE • CHICAGO 31, ILLINOIS

▲ For more details circle NED-85 L9 on enclosed inquiry slip ▲

CM PULLER

for RUGGED STRENGTH and GREATEST NUMBER of USEFUL FEATURES

CAPACITIES FROM 3/4 TO 6 TONS

LIFETIME LUBRICATED

Lifts or pulls in any position

SMOOTH OPERATION
Easy operating, accurate spotting, effortless lowering.

POSITIVE BRAKING
Holds load automatically with non-slip action.

RUGGED CONSTRUCTION
Built of heat treated alloys of steel and aluminum.

SUPER-STRENGTH CHAIN
Famous CM-Alloy link chain; long-lasting, non-kinking, self-cleaning.

• *Send for bulletin and name of your local distributor*

CM HOISTS

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
NEW YORK • CHICAGO • CLEVELAND
In Canada: McKinnon Columbus Chain Ltd., St. Catharines, Ont.

▲ For more details circle NED-86 L9 on enclosed inquiry slip ▲

SAVE YOUR OLD WOOD, CONCRETE FLOOR!... RESURFACE IT!

Get the heaviest duty wearing surface for foot and wheel traffic with these Flintkote Flooring Products —all are trowel finished. • Asphalt Mastic Flooring (FLINTMASTIC†) • Latex Industrial Flooring • Epoxy Flooring—for problem floors.

For complete information on mixes, coverage, uses and speed of application, write: The Flintkote Company, Industrial Division, 30 Rockefeller Plaza, New York 20, N. Y.

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FLINTKOTE

Manufacturer of America's Broadest Line of Building Products

▲ For more details circle NED-87 L9 on enclosed inquiry slip ▲

Play it Safe in HAZARDOUS AREAS!

GEMCO
EXPLOSION•PROOF
ENCLOSURES

Protect hazardous areas in your plant *economically* with Gemco explosion-proof pushbutton stations and enclosures. Lightweight cast aluminum construction, Gemco modular construction permits special pushbutton stations containing 1 to 64 units in one enclosure.

Specials? Gemco *standard* enclosures are available with receptacles, viewing windows, *plus* pushbutton stations and control panels.

Design and construction; NEMA types 7 and 9.

Write today for Bulletin No. 659 on Gemco explosion-proof enclosures

GEMCO ELECTRIC COMPANY
25685 West 8 Mile, Detroit 40, Mich.

▲ For more details circle NED-88 L9 on enclosed inquiry slip ▲

the penetrating force of...

COLD STEAM
CLEANS FASTER, BETTER, CHEAPER

Handle all kinds of cleaning jobs with the greatest of ease with HYDRO-AIR. This gun-type cleaner connects to standard air and hot or cold water supply. Compressed air "breaks" water into minute particles producing a dense penetrating force which blasts heavy dirt or quickly rinses metal sheets and small parts. Operates on 1 H.P. compressor and uses less than 3½ c.f. of air and 3½ gals. of water per minute. Easy to handle — weighs less than 2 lbs. Rubber sleeve protects user's hand when hot water is used.

$11.45

● NEW... Siphoning attachment for application of cleaning solvents — under pressure — on parts, machinery or any difficult surfaces for cleaning.

HYDRO-AIR PRESSURE WASHER

BLASTS STUBBORN DIRT!
HARMLESS TO FINEST FINISH!

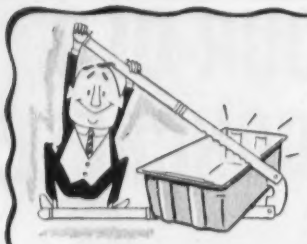
ORDER THROUGH YOUR SUPPLIER — or write direct. (Inquiries invited from industrial cleaning compounders interested in resale.)

D & M PRODUCTS, INC.
26 N. RAYMOND AVE. • PASADENA, CALIFORNIA

HYDRO-AIR is widely used throughout these industries:

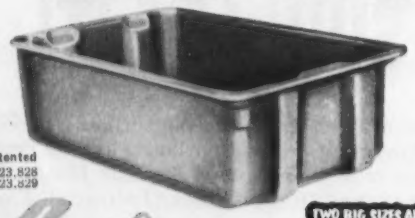
Aviation	Construction	Transportation	Meat Packing
Automotive	Pharmaceutical	Railroads	Baking
Food Processing	Paper	Petroleum	Foundries
Brewing	Ship Building	Mining	Jewelry
Dairy Products	Textile	Metalworking	Leather

▲ For more details circle NED-89 L9 on enclosed inquiry slip ▲



WON'T SHATTER
WON'T ROT
WON'T DENT
WON'T RUST
WON'T WARP

Stack-n-Nest® Tote Pans



Patented 2,823,828 2,823,829

TWO BIG SIZES ADDED
22x17x10 • 34x24x19

Lewis FIBER GLASS
reinforced polyester

SIZES	COLORS
16x10x5	RED
18x12x6	
18x12x8	GREEN
22x14x8	
22x17x10	GREY
27x16x11	
34x24x19	
38x19x14	

They stack and nest in their own dimension

No mechanical gadgets or space wasting cross-stacking. These pans stack straight, firm, and high . . . possible *only* with the exclusive Lewis "contour offset" design. Heat pressure molded in one piece of mighty Fiber Glass.

G. B. LEWIS COMPANY • Dept. NED • Watertown, Wis.

▲ For more details circle NED-90 L9 on enclosed inquiry slip ▲

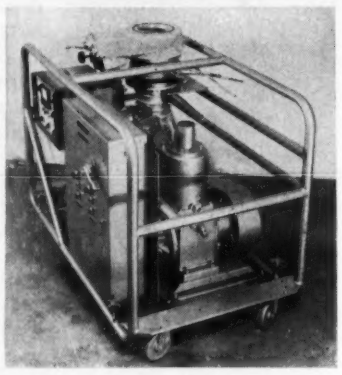
PALLETLESS LOAD HANDLER
lift truck unit side-shifts 6 in.

Economical palletless handling is made possible by this side-shifting, load-holding attachment for the Model FFE-20 Docker lift truck. It allows shifting of load

6 in. each side of center in addition to holding load in place while truck backs away from load. Truck automatically goes into reverse when holding attachment is actuated. Battery-powered Docker features low step height, full visibility, safety-brake control, zero turning radius, and inching control. Made by **Automatic Transportation Co.**, 149 W. 87th St., Chicago 21, Ill.

▲ For more details circle NED-91 L9 on enclosed inquiry slip ▲

PORTABLE VACUUM SYSTEMS
for coaters, furnaces, bell jars



Flexible vacuum source for production and research needs is furnished by portable caster-mounted self-contained vacuum systems with 2, 4, and 6-in. diffusion pumps. They can be moved between coaters, furnaces, bell jars, and other high vacuum equipment, requiring only connection to cooling water and a 220 or 440-v line. Holding pump and a mechanical refrigeration system are among optional equipment offered. Systems operate as low as the 10^{-6} mm Hg range. The 6-in. system is rated at 2000 cfm at 3×10^{-4} mm Hg. Made by **NRC Equipment Corp.**, 160 Charlemont St., Newton 61, Mass.

▲ For more details circle NED-92 L9 on enclosed inquiry slip ▲

Electronic Control Instrumentation

Swartwout Co.—"A Functional Guide to AutroniC Control Equipment" is title of Bulletin A-913 which concisely describes all the components employed in AutroniC Control. Featured is an illustrated chart on which all major system components are arranged functionally to enable reader to see what control instrumentation is available for a given process variable.

▲ For more details circle NED-93 L9 on enclosed inquiry slip ▲

JONES #3200

Hand Tachometer

BROAD RANGE
50 — 5,000 R.P.M.
with stop button

assures better production

HIGHER OUTPUT — QUALITY CONTROL obtained by maintaining proper machine speeds. Also helps avoid breakdowns by detecting irregularities.

CARRY IT FROM JOB TO JOB and keep it handy for quick, accurate tests. Choice of readings in R.P.M., F.P.M., etc.

GUARANTEED ACCURACY—superior construction, trouble-free. Unaffected by moisture, temperatures, electric currents.

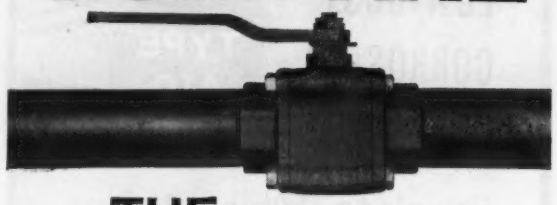
Many other Portable and Stationary Models, indicating Speeds between 50 R.P.M. and 50,000 R.P.M., are available.

Write for catalog 147-D

JONES MOTROLA CORP.
Stamford, Conn.

▲ For more details circle NED-94 L9 on enclosed inquiry slip ▲

COMPARE



THE ECON-O-MISER BALL VALVE... with conventional GATE VALVES

The ECON-O-MISER ball valve provides smooth, round, two-way flow! Easy to service without removal from the line . . . half million cycles not unusual . . . acts as both valve and union.

For revealing facts request bulletin EB 101.

WORCESTER VALVE CO., INC. / WORCESTER 10, MASS.

▲ For more details circle NED-95 L9 on enclosed inquiry slip ▲

FREE CATALOG
on Materials Handling

Low cost material handling. Move loads with ease! Many new features. Extra Safe! Write today for

YOUR CATALOG

It is full of information on how to use Thern products for low cost material handling.

THERN MACHINE COMPANY
3800 West 4th Street • Winona, Minn.

▲ For more details circle NED-96 L9 on enclosed inquiry slip ▲

Something really new

full ported - direct lift
SOLENOID VALVES
by
Atkomatic

Feature the new uramic solenoid that assures reliable operation regardless of line pressures.

•

PORT SIZES to 3"
PRESSURES from ZERO to 3,000 psi

Available in bronze or stainless steel

Send for Bulletin S-1

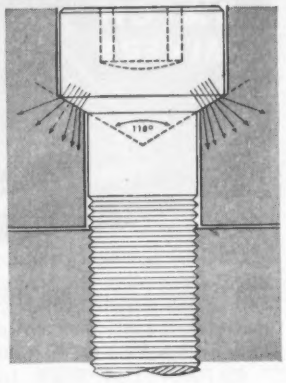
ATKOMATIC VALVE COMPANY, INC.
545 West Abbott Street • Indianapolis 25, Indiana

▲ For more details circle NED-97 L9 on enclosed inquiry slip ▲

new Mac-it IB

SOCKET HEAD CAP SCREW provides a 26.53% improvement in working efficiency!

(Even over the new 1960 Series)



It's the taper of the new Mac-it IB socket head cap screw that adds 16.66% *more bearing surface* without an increase in head size. And there's 14.28% *less resultant compression* because of the change in direction of stresses.

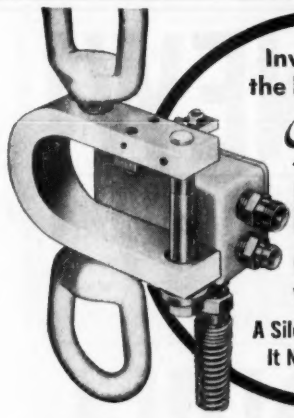
It takes 12% to 23% more torque to release a Mac-it IB screw. That means it holds tighter. Indenting and corner fatigue are eliminated. And the new IB is self-aligning, tight-sealing, stronger, yet more streamlined. Conservatively rated, the Mac-it IB provides a 26.53% improvement in working efficiency.

YOUR MAC-IT DISTRIBUTOR will be glad to give you the facts on the new IB's right now; or *write for new, illustrated specifications bulletin.*

Mac-It Parts Co., Dept. 24, Lancaster, Pa.

MAC-IT ALLOY STEEL SCREWS

▲ For more details circle **NED-98 L9** on enclosed inquiry slip ▲



Investigate the life-saving

Dillon DYNA-SWITCH

A Silent Watchman It Never Sleeps!

- Stops hoist & crane overloading
- Automatically cuts off power to motor when load exceeds pre-set weight.
- Can also ring bells, operate warning lamps, etc.
- Assures protection for personnel & equipment
- Easy to install. Hook models optional.
- Lightweight, compact, dead accurate.
- Working range 500 to 20,000 lbs.
- Will flex millions of cycles without losing resiliency.

YOURS FREE! Illustrated brochure and low price list. Write **today!**

W. C. Dillon & COMPANY, INC.

14578NE Keswick Street
Van Nuys 1, California

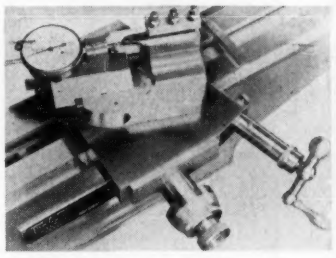
▲ For more details circle **NED-99 L9** on enclosed inquiry slip ▲

DISPOSABLE BOOT made of polyethylene film

Footgard polyethylene boots are pulled on over the wearer's regular shoes and can be worn open or closed with a rubber band or paper clip. The disposable, lightweight, waterproof boots prevent the spread of contaminating elements in various types of plants. Under normal conditions they can be worn several hours before the film wears through. Initial offering is a large size only which fits up to a Size 10 man's shoe. Other sizes can be made. Rolls of 50 and 100 boots per roll sell for $3.35 and $6.50, respectively. Made by **Plasticsmith, Inc.**, Box 1071, Pittsburg, Calif.

▲ For more details circle **NED-101 L9** on enclosed inquiry slip ▲

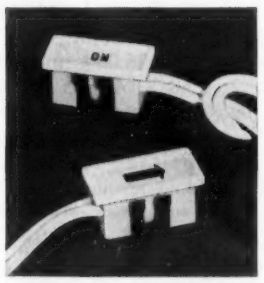
RADIUS TURNING ATTACHMENT machines concave, convex surfaces



Positive, even feed of this radius turning attachment for lathes is controlled by a worm and worm gear. It will machine concave or convex surfaces on the axis of the lathe by generating this surface with a single point turning tool. Tool bit is set directly to the desired radius with a dial indicator. Capacity is from 0 to 3⅝ in., either concave or convex. The beveled edge reads directly in degrees. Made by **Wade Tool Co.**, 49 River St., Waltham 54, Mass.

▲ For more details circle **NED-102 L9** on enclosed inquiry slip ▲

NEON INDICATOR LIGHT for either 125 or 250 v



Usable on various products to indicate passage of electric current, this neon indicator light consists of a 1/25-w neon lamp enclosed in translucent urea plastic case. Light can be used either as a unit, or as an integral part of a machine or electronic device. Case has self-adjusting mounting clips for insertion on 0.031 to 0.093-gage metal. It will also fit perforations on most standard switchplates. Furnished with 6-in. plastic-covered leads, light is available for either 125 or 250 v. Choice of imprints on face is offered. Made by **Westmoreland Plastics Co.**, Gertrude Street, Latrobe, Pa.

▲ For more details circle **NED-103 L9** on enclosed inquiry slip ▲

Dust

TRAP THIS DANGEROUS ENEMY with Hammond DUSKOLECTORS

Dust is a serious problem in most industrial plants. With Hammond DUSKOLECTORS you trap this dangerous enemy at its source before it can harm the health and efficiency of your employees and damage valuable machinery. Your cleaning and painting costs will also be reduced. Hammond DUSKOLECTORS offer you the best and most economical solution to your dust problems. Write today for catalog with helpful engineering information and interesting installation views.

"A MUST FOR DUST!"

Hammond Machinery Builders INC.
1623 DOUGLAS AVE. • KALAMAZOO, MICHIGAN

▲ For more details circle **NED-104 L9** on enclosed inquiry slip ▲

FASTER, HIGH PRESSURE INDUSTRIAL LUBRICATION

with **ALEMITE** Portable **POWER GUN**

fastest lubricator on two wheels... rolls anywhere

Alemite's Air-Powered Model 711-A Lubricator offers these two advantages, to give you faster lubrication anywhere inside or outside your plant:

1. **Easier to handle** . . . it saves valuable lubrication time. Pivot-swing dolly holds container upright at any pulling angle, so you can roll it *anywhere*, faster!
2. **Exclusive, newly designed pump** . . . packs more than enough power for every job, at 45 to 1 ratio. Delivers 14½ oz. of gun grease per minute at 70° F. Holds 25-, 35-, or 50-lb. pail—or 70 lbs. of grease in container. Dynamic primer assures positive priming.

PIVOT-SWING DOLLY FOR EASY MOVING . . .

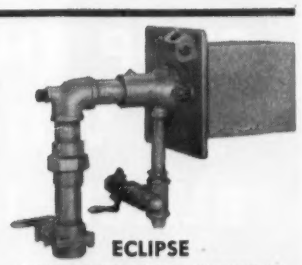
Write for FREE Alemite catalog today!

Symbol of SW Excellence — **ALEMITE** DIVISION **STEWART-WARNER** CORPORATION

Dept. HH-119, 1850 Diversey Pkwy., Chicago 14, Ill.

▲ For more details circle **NED-105 L9** on enclosed inquiry slip ▲

FIRST and FINEST in COMBUSTION



ECLIPSE TEMPERED AIR BURNERS

Outstanding characteristic of these burners is excellent flame stability at all rated firing conditions. Can be used as normal full premix tunnel burners for high-temperature work or with reduced gas input and full air flow for lower temperatures. Full furnace pressure and circulation maintained at all firing rates and temperatures. Hot spots eliminated as temperature differential between flame and work can be easily set. Very low blower pressure needed for rated capacities. Four sizes. Write for Bulletin H-44.

Consult Your Eclipse Combustion Expert • 38 District Offices to Serve You!

Eclipse

Industrial Combustion Division
ECLIPSE FUEL ENGINEERING COMPANY
1128 Buchanan Street, Rockford, Illinois

▲ For more details circle **NED-100 L9** on enclosed inquiry slip ▲

There's a *New* DIAL HEAD AGASTAT®

for every time/delay/relay application

Here's what you get with every Agastat time/delay/relay

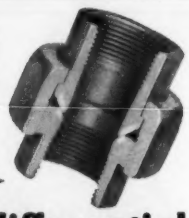
- Easy adjustment
- Repeatable accuracy
- Instantaneous recycling
- Unaffected by voltage variations
- Low power consumption

GET THE WHOLE STORY—write today for Bulletin No. SR-10 and find out how Agastat can help you to solve your time delay problems. Write to Dept. A35-115.

AGA DIVISION — ELASTIC STOP NUT CORPORATION OF AMERICA
1027 Newark Avenue, Elizabeth, N. J.
Gasaccumulator Co., (Canada) Ltd., 12 Gower Street, Toronto 16, Ontario

▲ For more details circle NED-106 L9 on enclosed inquiry slip ▲

In Rockwood UNIONS



the big hardness differential in seats makes a big difference *in the entire UNION*

In Rockwood Union #603 both seats are corrosion-resistant AISI molychrome steel, forged in place and double-locked under terrific pressures. The male seat is specially heat treated to make it 150 Brinell harder than the female seat.

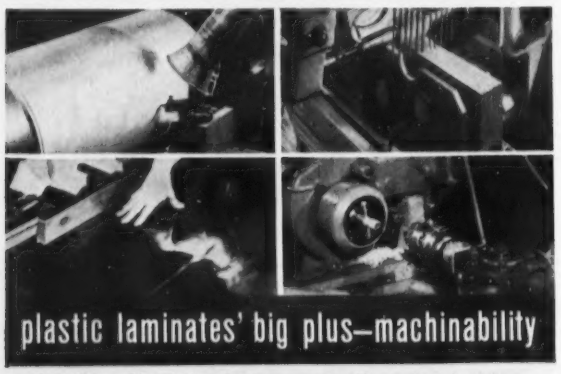
No other union has this hardness differential, which eliminates galling in make-up and assures long, trouble-free service life.

Other big differences in Rockwood Unions that mean greater advantages include: exclusive cold forging, for completely interchangeable parts and higher resistance to sever conditions . . . balanced design, for uniform strength throughout each Union . . . color-coding, for easy identification of types . . . "Rockwoodizing" with a special coating, for protecting all surfaces against corrosion.

Rockwood Unions are tested and listed by Underwriters' Laboratories, Inc. Send for complete facts.

ROCKWOOD SPRINKLER COMPANY
A Division of The Gamewell Company
965 Harlow Street, Worcester 5, Mass.

▲ For more details circle NED-107 L9 on enclosed inquiry slip ▲



Synthane Plastic laminates are excellent electrical insulators, chemically resistant, mechanically strong, and light in weight. But what makes all these combined advantages extra valuable is MACHINABILITY. Send for Bulletin.

SYNTHANE

SYNTHANE CORPORATION,
N.E. River Road, Oaks, Pa.
Please send me ☐ "Machining Laminates"
☐ Design Hints for Laminated Plastics.

Name _____
Address _____
City _____ Zone _____ State _____

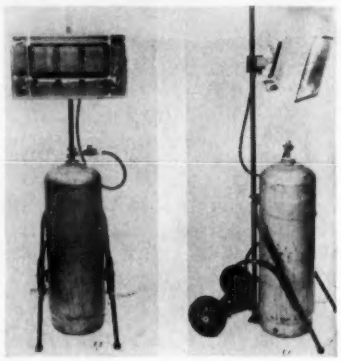
▲ For more details circle NED-108 L9 on enclosed inquiry slip ▲

ULTRASONIC IMPACT GRINDER cuts up to 3½-in. diameter areas

This 2500-w ultrasonic impact grinder can cut up to 3½-in. diameter areas in semiconductors, ceramics, ferrites, carbides, metals, jewels, and other hard or brittle materials. Tool head vibrates at 20 kc. Cutting, slicing, drilling, grinding, and trepanning are accomplished to tolerances of ±0.0003 in. Cuts in glass for precision electronic and photoelectric equipment are easily made. A new application is the splicing and sealing of such plastics as Mylar and others which resist being joined or sealed with heat, chemicals, or tape. Price is $16,800. Made by **Raytheon Co.**, 100 River St., Waltham 54, Mass.

▲ For more details circle NED-109 L9 on enclosed inquiry slip ▲

INFRARED HEATERS are portable gas-fired units



The man on the job, but not the air surrounding him is warmed by these portable infrared heaters which operate on bottled propane gas. Infrared rays are produced by burning gas on a perforated ceramic mat. Smallest of three sizes is an 8-lb unit with 16,000 Btu output which will operate 26 hr on a 20-lb LP-gas cylinder and 6½ hr on a 5-lb cylinder. Two larger sizes, mounted on wheeled gas bottle carriers, are rated 36,000 and 24,000 Btu. Larger unit operates 60 hr on 100 lb of propane; the small unit, 90 hr. Heaters can also be used for metal preheating, mold curing, paint drying, and thawing jobs. Made by **Hupp Corp.**, Perfection Industries Div., 1135 Ivanhoe Rd., Cleveland 10, Ohio.

▲ For more details circle NED-110 L9 on enclosed inquiry slip ▲

Group Showers

Bradley Washfountain Co.—As many as five persons can shower from one set of plumbing connections with the basic shower column, described in 8-page illustrated bulletin, "Bradley Group Showers." Various multiperson showers, offered with and without stalls, and wall-mounted units are detailed.

▲ For more details circle NED-111 L9 on enclosed inquiry slip ▲

STOP THIEVES WITH "BLACK LIGHT!"

Ideal burglar protection for spacious areas at a reasonable cost, the transistorized Kidde Photo-Electric Burglar Alarm System uses an invisible beam of "black light," is completely tamper-proof, requires no special wiring. It can be installed simply and easily by one man. For more information about this new, U.L.-approved protection, send the coupon or write to Kidde today!

Kidde Ultrasonic & Detection Alarms, Inc.
1124 Brighton Road, Clifton, New Jersey
Send me your Photo-Electric Burglar Alarm Data Sheet U-2.

NAME _____
ADDRESS _____
CITY _____ STATE _____

▲ For more details circle NED-112 L9 on enclosed inquiry slip ▲

A BATCH A MINUTE!
PRECISION MIXING

Used by industries the world over to mix and/or blend a complete batch of dry, free-flowing ingredients in one-minute cycles. Exclusive design prevents material separation or particle breakdown regardless of densities. Fast loading, unloading. Easy to clean.

CAPACITIES: 5 qts. to 160 cu. ft. Hand and motor driven models. All sizes available in stainless steel, other alloys.

Daffin MANUFACTURING COMPANY
INDUSTRIAL DIVISION
3952 NORTH PRINCE STREET • LANCASTER, PA.

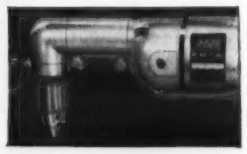
▲ For more details circle NED-113 L9 on enclosed inquiry slip ▲

NEW! SKIL 1/2" DRILL

20% MORE COMPACT THAN ORDINARY HEAVY-DUTY 1/2" DRILLS!

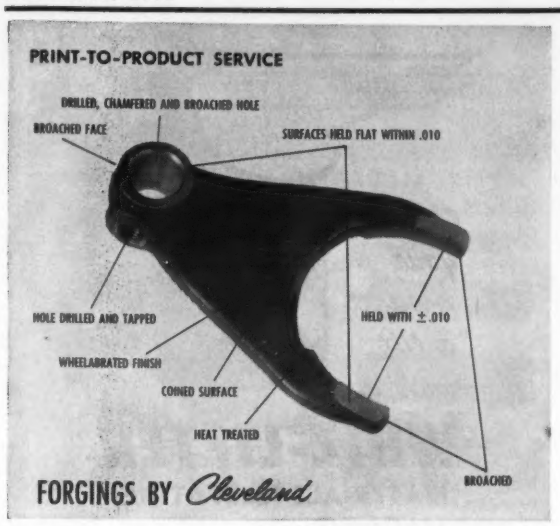
A real powerhouse of a drill. Yet it's compact enough to use in places where you can't manipulate ordinary heavy-duty ½-inch drills. Removable side handle gives safe, sure, two-hand control.

Can be used with SKIL No. 209 Right Angle attachment and special new self-feeding bits for boring holes up to 2 9/16" between joists, studs or in other "tight" locations. Ask your Skil distributor for a demonstration and FREE copy of 58-page SKIL Industrial Power Tool Catalog. Or write SKIL CORPORATION, 5033 Elston Avenue, Chicago 30, Illinois.



SKIL ...and SKILSAW POWER TOOLS

▲ For more details circle NED-114 L9 on enclosed inquiry slip ▲



How many of these steps does your product need?

If you can use skills and close tolerances like these, write for information to *Forge & Fittings Division, H. K. Porter Company, Inc., 3270 East 79th Street, Cleveland 4, Ohio.*

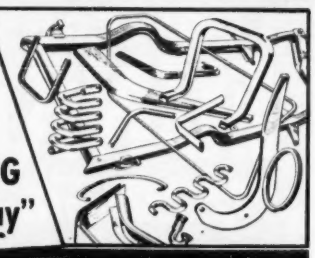
FROM A SINGLE SOURCE:
FORGINGS... Hammer, Press, Upset
MACHINING... Broaching, Milling, Turning, Drilling, Grinding
FINISHING... Heat Treating, Assembling, Painting, Plating

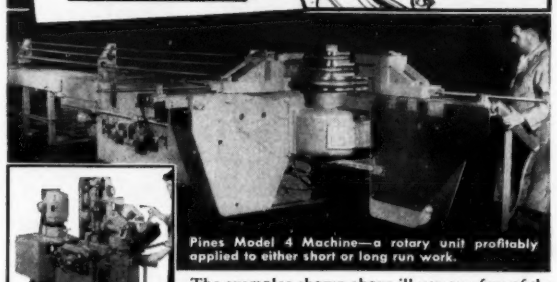
FORGE & FITTINGS DIVISION PORTER H.K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with 12 DIVISIONS including: Thermoid, Delta-Star Electric, National Electric, Peerless Electric, Riverside-Alloy Metal, Refractories, Connors Steel, Vulcan-Kidd Steel, Forge and Fittings, Disston, Leschen Wire Rope, Mouldings and H. K. Porter Company (Canada) Ltd.

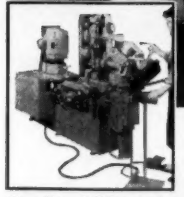
▲ For more details circle **NED-115 L9** on enclosed inquiry slip ▲

FOR THE LATEST
Cost-Cutting Methods
INVESTIGATE
COLD BENDING "The PINES-Way"





Pines Model 4 Machine—a rotary unit profitably applied to either short or long run work.



New Pines 3-T Progressive Bending Press makes quality bends in stock up to 1" O.D. at 2 to 3 times faster than ordinary machines. Larger units available.

The examples shown above illustrate a few of the many different jobs which are today more profitably produced on Pines Bending Machines or Bending Presses. New Machines and tooling techniques developed over the years are now effecting substantial savings in production costs. If your products require the cold forming of round, square, rectangular, extruded, or hollow stock to one or more different angles, it will pay you to investigate cold bending the "Pines-Way." Write today for more facts or assistance without obligation on any specific job.

PINES ENGINEERING CO., INC.
Specialists in Tube Fabricating Machinery 439 WALNUT • AURORA, ILLINOIS
PRODUCTION BENDING · DEBURRING · CHAMFERING MACHINERY

Free **DATA SHEETS** For latest data on new bending methods, write for issues of Pines News.

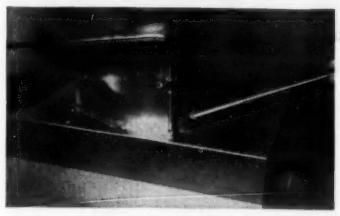
▲ For more details circle **NED-116 L9** on enclosed inquiry slip ▲

INDUSTRIAL STOOLS
adjustable feet increase height

Twenty models of steel stools for business and industry have adjustable feet for increasing stool height up to 3 in. in 1-in. increments. They are available with or without adjustable back rest and with plain steel or pressed wood - over - steel seats. Stool heights range from 18 to 33 in. Legs are equipped with choice of steel glide, black rubber, or combination feet, or with swivel casters. Adjustable leg extensions with steel glide tips are also available for installing on current Lyon stools. Made by **Lyon Metal Products, Inc.**, 9 Plant Ave., Aurora, Ill.

▲ For more details circle **NED-118 L9** on enclosed inquiry slip ▲

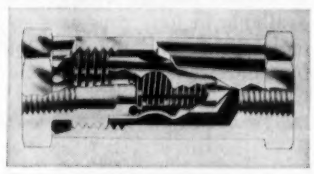
ALUMINUM SOLDERING KIT
simplifies metal joining



An ordinary soldering torch is the only additional equipment required to solder aluminum to aluminum with this soldering tool. The inexpensive, simple-to-operate tool is a long-handled holder with a glass fiber brush insert. When rubbed through molten solder on the metal surfaces to be joined, the brush abrades the metal, removing the oxide for a firm, smooth joint. Kit includes solder rods, glass brush refills, and illustrated instructions. Made by **Reynolds Metals Co.**, Reynolds Metals Bldg., Richmond 18, Va.

▲ For more details circle **NED-119 L9** on enclosed inquiry slip ▲

CHECK VALVES
for 3000-psi air, oil, or water use



Low back pressure and fast action are featured by 750 Series check valves for 3000-psi air, oil, or water service. Standard cracking pressure is 0.5 psi, although higher cracking pressures can be ordered. Low opening pressures, down to 1/16 psi, are available from stock. These leakproof, disc-type valves are very sensitive to reversal of flow and act rapidly. They are presently offered in brass in 1/8-in. pipe size with standard fittings. Other sizes and materials will be available soon. Prices start at $3.75 each. Made by **Bodnar & McDermott Mfg. Co.**, 19 Beechwood Ave., Mt. Vernon, N. Y.

▲ For more details circle **NED-120 L9** on enclosed inquiry slip ▲

Protects Metals at Red Hot Temperatures!

UP TO 2200°F

Heatproof Coating Stops Corrosion, Scaling and Oxidation

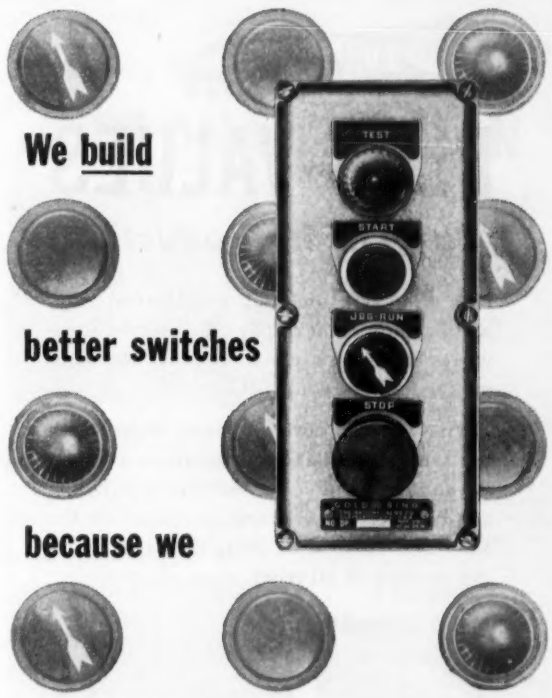
MARKAL "S-R" Coatings were developed to protect metals, graphite or carbon parts against scaling, corrosion, oxidation, or carbon and hydrogen penetration at temperatures up to 2200°F. MARKAL "S-R" Coatings are excellent for the protection of stacks, radiant tubes, retorts, carburizing grids, mufflers, manifolds, etc.

MARKAL "S-R" Coatings will not peel or crack at high temperatures and are not affected by rapid heating and cooling cycles.

MARKAL Coatings are manufactured in a complete range of types for specific applications. Write for a free copy of Catalog MPC. The **MARKAL COMPANY**, 3053 W. Carroll Ave., Chicago 12, Illinois.

▲ For more details circle **NED-121 L9** on enclosed inquiry slip ▲

We build better switches because we can't buy them...



It's as simple as that... and they cost no more than other switches

We had to build Gold-N-Ring Control Switches to meet our own high reliability specifications . . . our reputation was a part of this important fact. We're machine tool builders. We can't afford to be responsible for costly down-time on important capital investment equipment due to inferior control switches. That's why we build them like precise machine tools . . . and why it will pay you to check with us.

A wide range of basic units meets practically every need . . . as well as completely assembled stations in 1 to 4 button sizes to meet your electrical specifications. Ask our representative to call, or send for Bulletin ECS-56 . . . the complete selection and ordering guide.

◀ **Limit Switches.** A full line, used wherever the highest reliability factors are required. Bulletin EM-51.

Solenoids. A full line of standard and custom units for AC or DC. Bulletin EM-52A. ▶

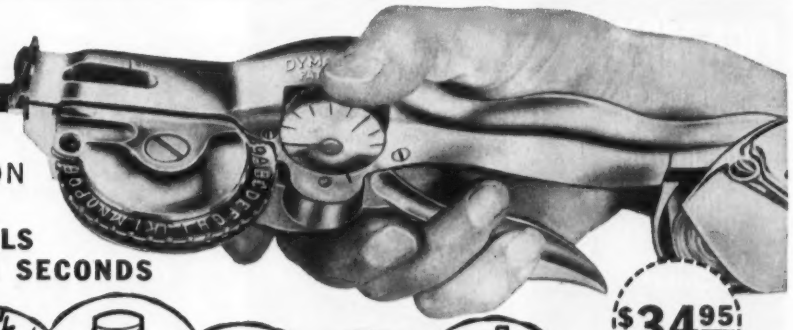
ELECTRICAL MANUFACTURING DIVISION

National Acme

THE NATIONAL ACME COMPANY
182 E. 131 st STREET
CLEVELAND 8, OHIO

▲ For more details circle **NED-122 L9** on enclosed inquiry slip ▲

VERSATILE—
NEW CONCEPT IN IDENTIFICATION SYSTEMS...
EMBOSSED LABELS ON THE SPOT IN SECONDS



$34.95

DEPENDABLE—ECONOMICAL

DYMO-MITE—the simple, single labeling system for plant, office, field and factory ... now in use everywhere. Recently introduced, the DYMO-MITE hand embossing system is being used for a wide variety of identifications by many of America's leading companies. Uses limited only to the scope of YOUR own imagination!

DYMO *tapes are available in colored vinyl plastics and various metals... cost just pennies a label.*

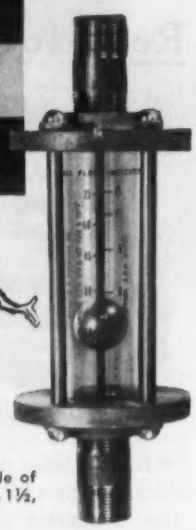
Write for FREE catalog and samples to: **DYMO CORPORATION** 2546-10th St., Berkeley 10, California Dept. B

PERMANENT

PRESSURE SENSITIVE—PLASTICS—METALS

▲ For more details circle **NED-117 L9** on enclosed inquiry slip ▲

SK FLOW INDICATOR
PROVIDES DUAL SCALE
FOR WATER OR AIR



Now, you can obtain approximate measurement of water flow in gpm and air flow in cfm with SK's Fig. 18123 Ball Flow Indicator.

Note the dual scale, for water and air, on the Flow Indicator in the illustration.

This indicator uses a ball to indicate flow in a pipe line. The position of the ball, in relation to the water or air scale graduations gives approximate indication of fluid rate-of-flow.

SK Fig. 18123 Ball Flow Indicators, made of bronze, are carried in stock in ¼, ½, ¾, 1, 1½, and 2 in. pipe connection sizes.

QUICK DELIVERY FROM STOCK

For Immediate Delivery, Standard SK Jet Ejectors, Rotameters, and Flow Indicators are stocked in Cornwells Heights (Phila.), Pa., Houston, Texas, and San Francisco, Calif.

Schutte and Koerting COMPANY
INSTRUMENT DIVISION
2227 STATE ROAD, CORNWELLS HEIGHTS, BUCKS COUNTY, PA.

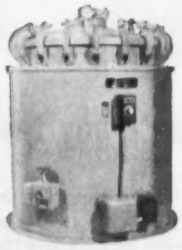
▲ For more details circle NED-125 L9 on enclosed inquiry slip ▲

Sta-Warm
PLUS-VALUES
Pay Off in Production

Day after day on your production line, where you want it to pay off, *there* the plus-values built into every Sta-Warm compound melter will show up BIG.

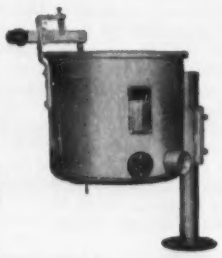
There's no other compound melter with the same dependable, economical, efficient advantages. The open secret, which you can inspect for yourself, is found in the *Sta-Warm Method* of designing and building melters of all types, sizes, shapes.

Rectangular dipping or melt down tank.



Low pressure tank with heated gate valve.

Cylindrical melt down tank with power agitator.



Dispensing pot with needle valve orifice.

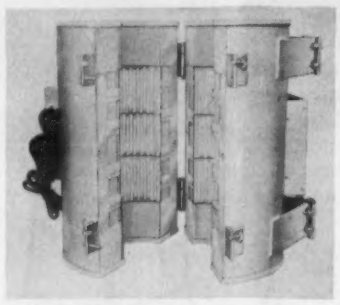
Write for Sta-Warm bulletins describing in detail the compound melter you can use. No obligation.

"If You Can Wrap a String Around It, Sta-Warm Can Heat It for You."

Sta-Warm ELECTRIC CO.
130 N. CHESTNUT ST., RAVENNA, OHIO
Subsidiary of ABRASIVE & METAL PRODUCTS CO.

▲ For more details circle NED-126 L9 on enclosed inquiry slip ▲

VERTICAL TUBE FURNACES for tensile, creep test machines



Maximum temperatures ranges to 1850°, 2200°, and 2600° F are available in this line of standard vertical tube furnaces for use in tensile and creep testing machines. Offered are solid tube type and a hinged type which allows swinging the furnace into position around the test piece. Heating chambers can be divided into three or more zones of control, each regulated by a stepless variable transformer. Control panels with all instrumentation can be provided. Illustrated split furnace has an 8-in. ID 16-in. long heating chamber with three zones of heat control. Vestibules 4½ in. long at each end minimize heat loss. Made by **Hevi-Duty Electric Co.**, Box 563, Milwaukee 1, Wis.

▲ For more details circle NED-127 L9 on enclosed inquiry slip ▲

HEAT TREATING FURNACE range increased to 2400° F

Model 1218 Buzzer heat treating furnace has been modified to operate in the 2250 to 2400° F range compared to previous range of 1850 to 2000° F. It employs quiet, atmospheric gas burners which fire across underside of silicon carbide hearth. Flame does not impinge upon work. Automatic temperature controls can be supplied and are easily attached. Furnace can also be supplied with a muffle for inert atmosphere applications and is available in four sizes as a special sealed unit for most metal processing requiring other atmospheres. Made by **Charles A. Hones, Inc.**, 2473 Grand Ave., Baldwin, L. I., N. Y.

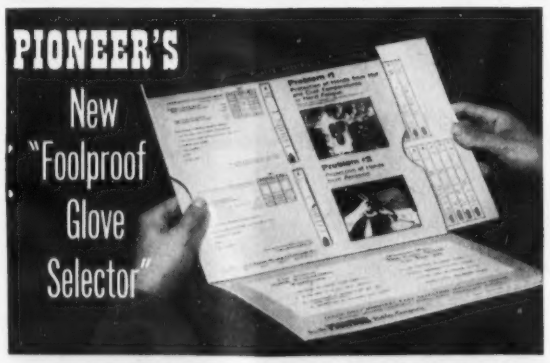
▲ For more details circle NED-128 L9 on enclosed inquiry slip ▲

Work Holding Clamps & Fixtures

Northwestern Tools, Inc.—Price, size, and weight data relative to toggle shoe clamps, steel and nylon shoes, V-pads, knobs, jig feet, shoulder and knurled head screws, fixture keys, latch bolts, flanged nuts, washers, clamps, cut thread studs, and step blocks are tabulated in 8-page Catalog 29. Information is also provided on punch press sets, stud sets, step block sets, and other work holding fixture accessories.

▲ For more details circle NED-129 L9 on enclosed inquiry slip ▲

PIONEER'S New "Foolproof Glove Selector"



ELIMINATES COSTLY ERRORS!

Helps you solve many hand protection problems in seconds — whether the problem involves chemicals, abrasion resistance, worker fatigue, extreme hot or cold temperatures, or products that must be protected from hands!

Send For PIONEER'S FREE "Foolproof Glove Selector"

The PIONEER Rubber Company
234 Tiffin Road, Willard, Ohio (S)

Please send me:
☐ New "Foolproof Glove Selector" by Pioneer
☐ 1959-60 Pioneer Industrial Glove Catalog
☐ 17" x 22" Full Line Glove Wall Chart

Firm _____
Address _____
City _____ Zone ___ State _____
Requested by _____

▲ For more details circle NED-130 L9 on enclosed inquiry slip ▲

Give your product a lift with a

WHIZ-LIFTER

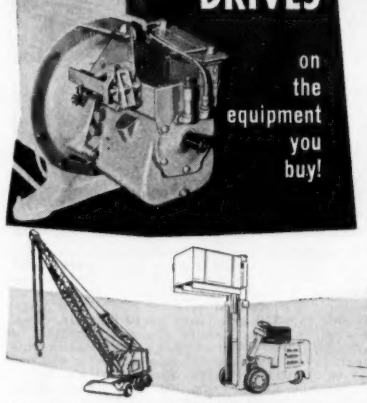
MATERIALS ELEVATING MACHINE—Assures speedy, automatic bulk product elevating into hopper of a weighing or filling machine without danger of spillage or breakage! Will handle drugs, hardware, pharmaceuticals, plastics, chemicals, etc., with trouble-free efficiency.

Write for literature

FRAZIER & SON
20-01 INDUSTRIAL WEST, ALLWOOD, CLIFTON, NEW JERSEY
Designers and manufacturers of • Volumetric and Net Weighing Machines • Parts Handling Equipment • Rotary Filling Machines • Conveying & Elevating Equipment

▲ For more details circle NED-131 L9 on enclosed inquiry slip ▲

LOOK FOR FUNK revers-O-matic DRIVES on the equipment you buy!



Get smooth, instant power shifting — both forward and reverse, or lift and lower—with JUST ONE LEVER.

Power Shovels
Earth Movers
Road Rollers
Draglines and Cranes
Hoisting Equipment
Industrial Locomotives

FUNK MFG. CO. P. O. Box 577-C Coffeyville, Kan.

▲ For more details circle NED-132 L9 on enclosed inquiry slip ▲

From Seattle to Sydney, from Boston to Bombay, those who demand the best insist on Kerotest. These quality valves have been in service around the world for 50 years. For best service in your applications, always specify Kerotest.

WRITE TODAY FOR Catalog!

KEROTEST

KEROTEST MANUFACTURING COMPANY
2522 Liberty Avenue, Pittsburgh 22, Pa.
In Canada, Kerotest products are manufactured and distributed exclusively by Guelph Engineering Company, Guelph, Ontario.

▲ For more details circle NED-133 L9 on enclosed inquiry slip ▲

FREE CABINETS!

Included at no extra cost with each complete or sectional order of the new DUNDICK DeLuxe Precision Pins

THE PIN WITH A MILLION USES

- Core Pins
- Perforators
- Gages
- Set-up Pins
- 2" Long

$1.25 per pin in lots of 10 or more in your choice of sizes.

721 sizes—from .030 to .750

GUARANTEED ACCURACY within a tolerance of plus or minus fifty millionths

- Each cabinet complete with lacquered hardwood block. Contains properly identified and sized holes to hold pins.
- Heavy-duty all-steel construction.
- Cabinets interlock to form compact unit.

DUNDICK TOOL WORKS, INC. 3410 West 31st St. Chicago 23, Illinois

▲ For more details circle NED-134 L9 on enclosed inquiry slip ▲

Use MOTO-TRUC

Moto-Truc pallet trucks are built to handle loads in tight places where larger trucks bog down. The standard model — PAL is only 28" longer than the load while the special short-coupled model — PAL-SC is only 24" plus load.

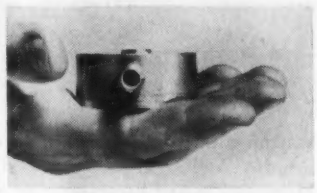
Able to turn in their own length, these tough little walkies are ideal for handling in freight cars, trucks, elevators, narrow warehouse aisles and crowded production areas.

WRITE TODAY... For full information on Moto-Truc pallet trucks.

The MOTO-TRUC Co.
1961 E. 59th STREET • CLEVELAND 3, OHIO

▲ For more details circle NED-135 L9 on enclosed inquiry slip ▲

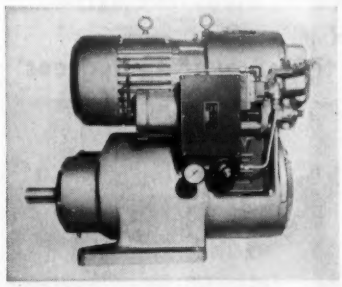
PANCAKE AIR CYLINDER is low pressure, space saving unit



Low pressure air power can now be utilized in limited space areas with the Pancake line of air cylinders developed principally for the tooling industry. Units are offered in pressure ratios from 1:1 to three times line pressure and with strokes from 0.010 to 1 in. The push-type cylinder is made in three sizes with diameters of 2, 2¾, and 3¼ in. Pull types and specials, as well as other sizes, can be supplied. Made by Fabco, 1231 Main Ave., Cleveland 13, Ohio.

▲ For more details circle NED-137 L9 on enclosed inquiry slip ▲

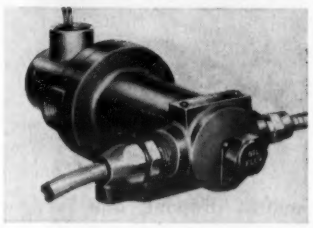
VARIABLE SPEED DRIVE automatically holds cutting speeds



Sizes from ¼ to 40 hp, speeds from 1.7 to 4660 rpm, and 2:1 to 10:1 speed variations are available in the Reeves packaged adjustable speed drive for lathes. With its closed-loop feedback control it maintains cutting speeds automatically. The Vari-Speed Motodrive produces an adjustable output speed and drives the lathe spindle. As the cutting tool cuts across the face of the part being machined, a pneumatic positioner in the Airtrol automatic pneumatic control receives an air signal indicating a change in working diameter. Output speed of the Motodrive is automatically corrected to compensate for this change. Made by **Reliance Electric & Engineering Co.**, Reeves Pulley Div., 1225 Seventh St., Columbus, Ind.

▲ For more details circle NED-138 L9 on enclosed inquiry slip ▲

AUTOMATIC LUBE DISPENSER operates on 30 to 150 psi pressure



Multipurpose, automatic lubricant dispenser will also handle light grease, liquid soaps, tap lubricants, glycerine, and other liquids. The A-L-D unit operates at 30 to 150 psi on 115 or 230 v, 50 or 60 cycles. It can be purchased separately, or with 1-gal reservoir and actuating switch. Unit, including 36-in. flexible tube and nozzle, sells for $59. Made by **Logansport Machine Co.**, Foot of W. Linden Avenue, Logansport, Ind.

▲ For more details circle NED-139 L9 on enclosed inquiry slip ▲

Hamilton

SUPER SENSITIVE DRILLING MACHINES

FOUR STANDARD MODELS MANY VARIANTS

Write for FREE Information Batch No. D-820

This is the Hamilton Varimatic® Super Sensitive Precision Drilling Machine equipped with "tool-room base" and compound table.

THE HAMILTON TOOL COMPANY
901 HANOVER STREET • HAMILTON • OHIO

▲ For more details circle NED-140 L9 on enclosed inquiry slip ▲

News from your **B.F.Goodrich**

TW TIRE AND WHEEL ANALYSIS MAN

The wire in these tires saves concrete pipe company 200% on tire costs

Scraps of reinforcing rods used in pipe construction once caused terrific tire trouble for this Toledo, Ohio, concern. Then the B.F.Goodrich Tire and Wheel Analysis man suggested a switch to new "wired" tires—tires made with a special shield of steel wire under the tread to guard against punctures and blowouts.

Result: Tires once lasted only 6 months, but these B.F.Goodrich "wired" tires have been in constant use for 2½ years *without repairs*. Tire costs have been cut 200%. This is typical of the work a B.F.Goodrich Tire and Wheel Analysis man does. What can he do for you?

4 reasons for choosing All-Purpose pneumatic tires

If you use pneumatic tires on your materials handling equipment, consider these 4 facts: (1) B.F.Goodrich All-Purpose pneumatic tires give extra traction on all hauling surfaces. (2) They protect floors from damage. (3) Operator fatigue and equipment maintenance are reduced. (4) All-Purpose tires are stronger, more stable, have hundreds of gripping edges. Ask your B.F.Goodrich TW Analysis man if this isn't the kind of tire you should be using.

I can save you up to 50% on industrial tire costs

All-Purpose and "wired" tires are just 2 examples of the specialized industrial tires B.F.Goodrich makes. As your trained Tire and Wheel Analysis man, I know which tires are best for you. My survey of your operation costs nothing—can pay big dividends in money saved on tire costs. Mail the coupon today for my FREE services and tire recommendations.

Specify B.F.Goodrich tires when ordering new equipment.

B.F.Goodrich **Smileage!**

©The B. F. Goodrich Company

The B.F.Goodrich Company
Department TW-802, Akron 18, Ohio

- ☐ Please send me information on All-Purpose tires.
- ☐ Please send me information on "wired" pneumatic tires.
- ☐ Please have the Tire and Wheel Analysis man call.

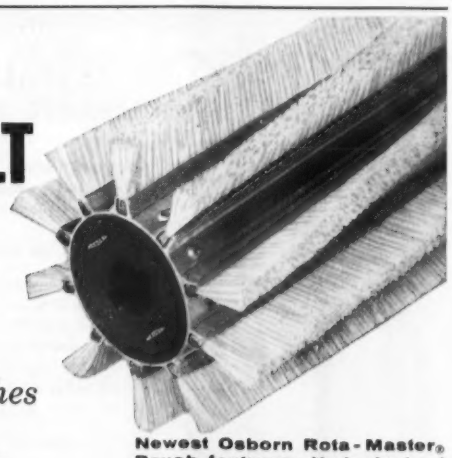
NAME _____
COMPANY _____
STREET _____
CITY _____ ZONE _____ STATE _____

B.F.Goodrich *industrial tires*

▲ For more details circle NED-141 L9 on enclosed inquiry slip ▲

OSBORN®

HOW TO END CONVEYOR BELT CLEANING PROBLEMS



Unique OSBORN ROTA-MASTER® brushes do the job automatically . . . can cut your downtime and maintenance costs now

CARRYOVER on rubber and fabric conveyor belts can cause destructive wear—and add costly downtime hours spent in frequent cleaning. Osborn Rota-Master® Brushes automatically and efficiently prevent buildup of such materials as chemicals, food, tobacco, chips, core sand, coke and ore on belts, rolls, snubber pulleys and return idlers.

Easy to install and adaptable to any system—Rota-Master Brushes clean conveyor belts with a unique, flexible sweeping action that does a thorough job. Brushes are self-cleaning, simple to adjust for correct brushing pressures.

Write for details to help pinpoint exactly how you can cut costs and simplify your conveyor cleaning. *The Osborn Manufacturing Company, Dept. N-12, Cleveland 14, Ohio.*

Newest Osborn Rota-Master® Brush features: Newly developed KORFIL®P fill material is extra-rugged . . . cleans more thoroughly, wears longer. New lightweight mounting is easier to handle and install. Mounting is re-usable . . . replacement strips easily inserted. In 16", 18", 24" face widths. Assemble in multiples for any belt size.

Write For Rota-Master® Brush Booklet . . . includes complete application, specification and operational data for all types of conveyor belt cleaning requirements.

Osborn Brushes

POWER, PAINT AND MAINTENANCE BRUSHES • BRUSHING METHODS • BRUSHING MACHINES FOUNDRY PRODUCTION MACHINERY

▲ For more details circle NED-136 L9 on enclosed inquiry slip ▲

BE SURE . . . SPECIFY

HIGH PERFORMANCE WAYNE PUMPS

EFFICIENCY GOES UP

- ROLLING GEAR DESIGN
- HYDRAULICALLY BALANCED
- 3 TO 500 GPM
- PRESSURES TO 200 PSI

Put the newly designed Wayne Rotary Pumps on your equipment and boost efficiency and reduce costs. There's a Wayne Rotary Pump for every type of equipment to pump all types of products—from glue to gasoline . . . syrup to toluene.

Wayne's gear-within-a-gear pumps now have improved hydraulic balancing, new seals and mounting arrangements . . . available in sizes from 3 to 500 gallons per minute. Whether you require one pump for your plant, or many for the equipment you manufacture, there is a long-life Wayne design to save you money.

GET NEW DATA

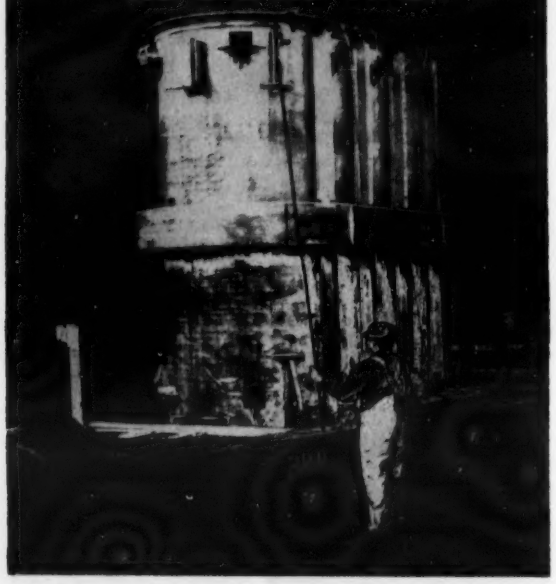
Ask your Wayne representative to recommend the right iron, bronze or special metals construction for your pump application. Send for the new Wayne Rotary Pump Engineering Manual.

THE WAYNE PUMP COMPANY
Industrial Division
Fort Wayne 4, Indiana
Div. Symington Wayne Corp.

Wayne PUMPS

▲ For more details circle NED-142 L9 on enclosed inquiry slip ▲

WE TAILOR-MAKE 'EM AS BIG AS THIS



THIS is a power transformer tank that Alcoa fabricated for General Electric—a one-of-a-kind job. It is big—13 ft high—and weighs 6,500 lb. It is leak-proof and conforms to exacting dimensional requirements. Alcoa's Jobbing Division built it, because Alcoa has both the fabricating facilities and the engineering skill to deliver this kind of extraordinary order. It is the kind of job Alcoa takes in stride.

ALCOA can do the same type of job for you. The services of the Alcoa Jobbing Division are available for standard production runs or unusual "tailor-made" products such as G.E.'s transformer tank. When you take advantage of Alcoa's fabricating facilities, you save tooling-up costs and investment in additional equipment.

WRITE FOR FREE BOOKLET that tells you how Alcoa's Jobbing Division can serve you as a fabricator or subcontractor. It contains 16 pages of information on Alcoa's ability to take expensive and difficult jobs off your hands and save you money all around. For your copy, write or clip the coupon and mail today.

ALCOA ALUMINUM

Your Guide to the Best in Aluminum Value

For exciting drama watch "Alcoa Presents" every Tuesday, ABC-TV, and the Emmy Award winning "Alcoa Theatre" alternate Mondays, NBC-TV

ALUMINUM COMPANY OF AMERICA
1866-L Alcoa Building, Pittsburgh 19, Pennsylvania
Please send my free copy of *Alcoa Aluminum Fabricating Facilities.*

Name _____ Title _____
Company _____
Street Address _____
City _____ Zone ____ State _____

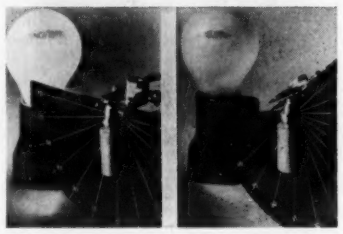
▲ For more details circle NED-143 L9 on enclosed inquiry slip ▲

ELECTRIC INFRARED HEATER
spot-heats indoor, outdoor areas

Infrared rays emitted by the Quartzone tube area heater may be directed to a specific area, warming only the persons or objects upon which they are directed, regardless of the surrounding temperature. Heater is suited for indoor or outdoor use, even in extremely cold weather, in such exposed areas as loading docks, warehouses, and buildings with high ceilings. Spot heating, drying, and process applications are other uses. Heater is controlled by on-off switch, time switch, or thermostat. Quartzone tube has high resistance to thermal shock. Heater itself has a louvered, weatherproof housing with universal brackets for chain suspension or for bolting to ceiling or wall brackets. Made by **Commercial Controls Corp.**, Electromode Div., 45 Crouch St., Rochester 3, N. Y.

▲ For more details circle NED-144 L9 on enclosed inquiry slip ▲

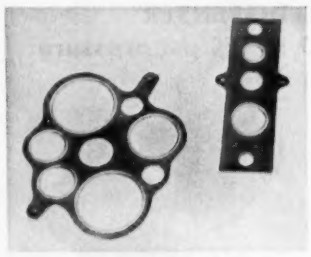
SAFETY SWITCH
opens when tipped over 45 degrees



Contacts of this "tip-off" safety switch open when switch is tipped more than 45 degrees from vertical. Switch is designed for electrical appliances that are electrical or fire hazards when accidentally tipped over. Photo shows switch in on and off positions. Rated 15 amp, 118 v, or 8 amp, 236 v, unit has silver contacts and either spade or screw type terminals. Made by **Bryant Electric Co.**, Box D, Barnum Station, Bridgeport 2, Conn.

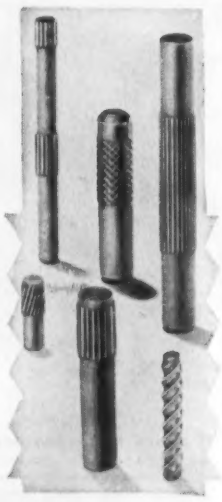
▲ For more details circle NED-145 L9 on enclosed inquiry slip ▲

O-RING RETAINER ASSEMBLIES
cut machining of matching flanges



Metallic O-rings held in metal retainer plates are offered in different hole patterns and sizes to match various flange configurations. Retainer plate holds the press-fitted O-rings without cross-section distortion, secures them against dropout, and facilitates handling. Assembly furnishes an automatic O-ring compression limit, controls hoop tension of the O-ring, simplifies surface finishing operation, and allows interchangeability of flanges. Made by **United Aircraft Products, Inc.**, Dept. R, Box 1035, Dayton 1, Ohio.

▲ For more details circle NED-146 L9 on enclosed inquiry slip ▲



CUT FASTENING COSTS with HASSALL THREADED PINS

- Low cost
- To your specifications
- Roll threaded for greater strength
- Large or small quantities
- Close tolerances
- Any finish
- All metals

We are saving many of our customers from 20% to 50% on their special small threaded pins. These threaded pins may be made to your specifications in a wide variety of metals and finishes. Large or small runs are economical.

Let HASSALL quote on your small threaded pins . . . we can show you real savings.

Other HASSALL Specials

- Rivets
- Nails
- Studs
- Hinge Pins
- Screws
- Drive Screws
- Machine Screws
- Fasteners
- Small parts

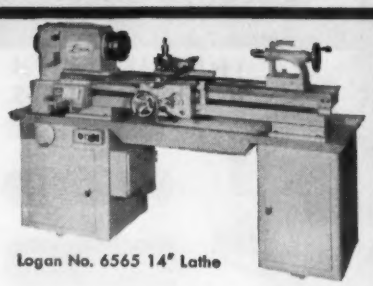
WRITE FOR CATALOG . . . . . with it we will send you our popular decimal equivalent wall chart.
John Hassall, Inc., Box 2178 Westbury, L. I., N. Y.

HASSALL

SINCE 1850 — Hassall — NAILS, RIVETS, SCREWS AND OTHER COLD-HEADED FASTENERS AND SPECIALTIES

▲ For more details circle NED-147 L9 on enclosed inquiry slip ▲

its specifications add up to high production capacity



Logan No. 6565 14" Lathe

Logan 14" Lathe

- Spindle speeds to 2000 rpm.
- 1½" Levermatic collet chuck capacity
- 14⅝" swing over bed
- 9" swing over saddle cross slide
- 40" between centers

Logan's generous combination of high-quality features means greater reliability, accuracy, and longer life.

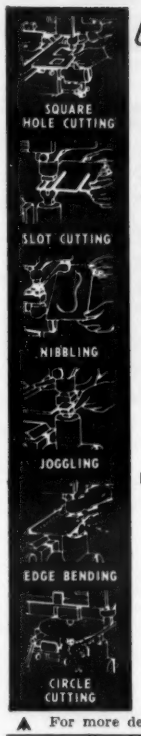
- Oversize spindle—1⅝" bore—four super-precision ball bearings—built-in preload
- Variable-speed drive—change speed with work turning—without shifting belts
- Warp-free lathe bed—high, strong walls braced by oversize ribs withstand heaviest stresses; two V-ways, two flat ways flame-hardened, precision-ground

These and many more reasons prove Logan's greater working capacity. The specifications tell the story. Write for complete information.

LOGAN ENGINEERING CO.
Dept. Q-1159, 4901 Lawrence Ave., Chicago 30, Ill.

▲ For more details circle NED-148 L9 on enclosed inquiry slip ▲

5 machines in 1



LENNOX TRU-EDGE® METLMASTR

The "All American" Shearing, Forming and Piercing Machine

If you work in sheet or plate, here is the one machine that fits perfectly into your PROFIT picture! It eliminates costly dies and gives you complete operational versatility—Investigate now!

LM2

AVAILABLE IN FOUR MODELS

Write today for complete information on the METLMASTR

LENNOX TOOL and MACHINE BUILDERS

636 N. Baxter St. • Lima, Ohio
Buy with Confidence
Buy an American-made machine

▲ For more details circle NED-149 L9 on enclosed inquiry slip ▲

ELECTRIC...No Air Needed!

No air line needed! — this new 3-in-1 electrically operated unit controls critical process temperatures at far below cost of two- and three-unit systems!

- Dependable Accuracy
- Positive Positioning
- Field Reversibility
- Adjustable Proportional Band
- Simplified Settings
- Easy to Install

Get the full story NOW in Bulletin VY-756

Mr. Controls — Robertshaw-Fulton CONTROLS COMPANY — FULTON SYLPHON DIVISION, Knoxville 1, Tenn.

▲ For more details circle NED-150 L9 on enclosed inquiry slip ▲

MISTKOP STOPS MIST

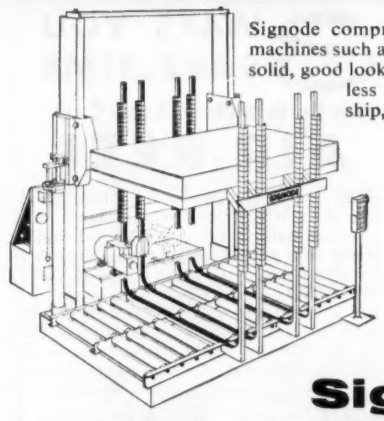
COLLECTS MIST-FOG EFFECTIVELY IN A SMALLER SPACE

This efficient Mistkop unit provides low-cost mist control for all machining operations employing coolants or lubricants. Requires no duct work or costly piping—*is actually portable!*

Mistkop is sturdy in design—has a minimum number of parts and gives long, trouble-free service. Stops clouding of lights . . . eliminates fire hazards of uncontrolled mist. Write for detailed description.

AGET Manufacturing Company
1396 Church Street • Adrian, Michigan

▲ For more details circle NED-151 L9 on enclosed inquiry slip ▲



Signode compression strapping machines such as this one produce solid, good looking bales that cost less to handle, store, ship, and receive.

NEW Signode compression strapping machines

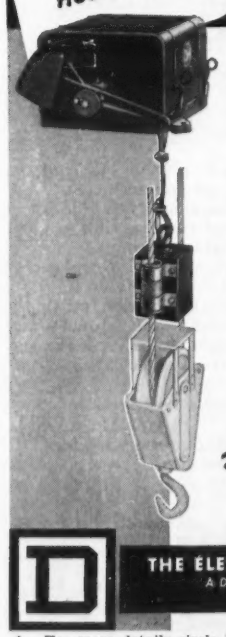
New Signode compression strapping machines are available in a range from the lowest cost to machines that automatically apply four straps in less than a minute. For more information about applications or about the new machines, call the Signode man near you, or write:

SIGNODE STEEL STRAPPING CO.
2643 N. Western Avenue, Chicago 47, Illinois
Offices Coast to Coast
Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

▲ For more details circle NED-152 L9 on enclosed inquiry slip ▲

Prevent OVERHOISTING ACCIDENTS

EC&M LIMIT STOPS for AC and DC Cranes



• Crane operators work better when fear of overhoisting accidents is eliminated. The EC&M Limit Stop disconnects motor from the line for a quick stop.

On DC cranes with high hoisting speeds, dynamic braking reduces drift and aids in bringing the hook block to rest. Because EC&M Limit Stops are operated directly by the hook block, stretching of the hoisting cable does not affect tripping point.

EC&M Limit Stops are easily installed on both new and existing AC and DC cranes.

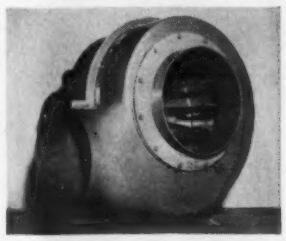
Write for Bulletin 6170

It gives the complete story of EC&M's Youngstown Safety Limit Stops

THE ELECTRIC CONTROLLER & MFG. CO.
A DIVISION OF THE SQUARE D COMPANY
CLEVELAND 28 • OHIO

▲ For more details circle NED-153 L9 on enclosed inquiry slip ▲

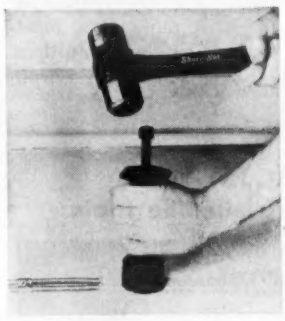
DIRECT-DRIVE BLOWERS made of corrosion resistant plastic



Capacities from 399 to 2000 cfm are offered in line of PVC utility blowers. The direct drive, corrosion resistant units have 1/3, 3/4, and 1-hp motors. They are constructed of unplasticized rigid polyvinyl chloride which resists almost all fumes. Compactness suits them for hood exhaust systems and similar uses. Blowers have PVC drain connections, pedestals coated with polyvinyl paint, ball bearing motors, and are designed to withstand 140° F at the blower inlet. Made by **Industrial Plastic Fabricators, Inc.**, Endicott Street, Norwood, Mass.

▲ For more details circle NED-154 L9 on enclosed inquiry slip ▲

HAMMER FASTENING TOOLS drive fasteners into concrete, steel



Shure-Set R-300 hammer-in fastening tool sets both 1/4-in. fasteners and 8-32 studs. Second tool, the Shure-Set R-350 sets 8-32 studs only. System components are fastened without drilling or plugging to concrete, masonry, and light steel in three or four blows of a hammer. Fastener holder of R-300 tool is beveled to fit temperature control installation clips. A heavy duty base plate adapts it for the 8-32 studs. Made by **Olin Mathieson Chemical Corp.**, Ramset Fastening System, 12117 Berea Rd., Cleveland 11, Ohio.

▲ For more details circle NED-155 L9 on enclosed inquiry slip ▲

TIME DELAY RELAY infinitely adjustable in 5-min range

Subminiature, transistorized TR-301 time delay relay for machine tool and other industrial control uses has an infinitely variable delay range from 10 milliseconds to 5 min. Unit operates on 24 to 130-v ac, has octal plug-in mounting, and responds and recycles instantly. It is potted with special foam for protection against dust, moisture, and oil. Repetitive accuracy is better than ±2 per cent. The 1 or 2-pole, double-throw contacts are rated 5 amp resistive at 115 v ac. Measuring only 2 x 2 x 3 in., relay is also available for 24 to 130-v dc operation. Made by **Syracuse Electronics Corp.**, Box 566, Syracuse 1, N. Y.

▲ For more details circle NED-156 L9 on enclosed inquiry slip ▲

EXACTLY THE PANELBOARD YOU WANT... New 250 V.

QMB—Right off Your SQUARE D Distributor's Shelf!

PLUG-IN CONSTRUCTION —handles just like plug-in duct

NEW 250 VOLT UNITS SMALLER —more circuits in same space

HEAVY-DUTY industrial design

OVER-THE-COUNTER DELIVERY Pick up complete panelboards same day job develops

Write for the complete QMB Panelboard story!

Square D Company, 6060 Rivard St., Detroit 11, Mich.

SQUARE D COMPANY

▲ For more details circle NED-157 L9 on enclosed inquiry slip ▲

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

For Complete Information Phone BAker 5-8201 or write:

PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

▲ For more details circle NED-158 L9 on enclosed inquiry slip ▲

It's Different the UNI/RAP®

Faster Warm-Up Greater Capacity

THE EXCLUSIVE DUAL VALVE* does it. The large main orifice and valve, opened by the pilot valve by a balanced valve principle, permits instant discharge of large quantities of air and condensate. This produces faster warm-up and tremendously increases capacity. All working parts are stainless steel to minimize wear.

ORDER BY PIPE SIZE Each pipe size (1/2" through 2") automatically handles a complete range of pressures from 0 to 250 PSI without orifice, valve or bucket changes. Write for Bulletin 800D or contact our nearest office.

*Trade Name—Patented

the Dual Valve

"WHERE *Good Connections* COUNT"®

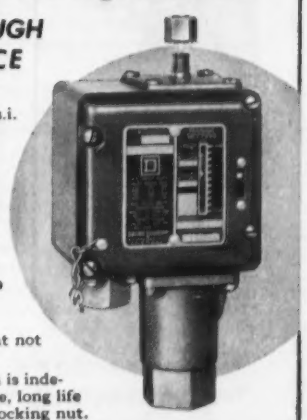
PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N.C.
Baltimore—Buffalo—Camden, N. J.—Chicago—Cleveland—Los Angeles
New York—Providence—Hamilton, Ont.—Montreal—Toronto

▲ For more details circle NED-159 L9 on enclosed inquiry slip ▲

NEW!

5000# Pressure Switch for Hydraulic Systems

DESIGNED FOR TOUGH INDUSTRIAL SERVICE



• **Wide Range of Pressures** adjusts from 550 to 5,000 p.s.i. on rising pressure
• **Strain Relief** • prevents damage from shock of violent pressure surge
• **Oil-Tight Construction** gasketed construction prevents entry of oil and coolant into switch mechanism
• **Rugged Snap-Action Switch** permits operating rates up to 300 per minute
• **Long Life** • pressure element not subject to fatigue
• **Low Maintenance** • piston is indestructible, rugged metal case, long life switching member. Range-locking nut.

Write for Bulletin 9012 ADW7. Square D Company, 4041 North Richards St. • Milwaukee 12, Wis.

NOW . . . EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE

SQUARE D COMPANY

▲ For more details circle NED-160 L9 on enclosed inquiry slip ▲

NEW SPRAY-ON RUST PREVENTIVE

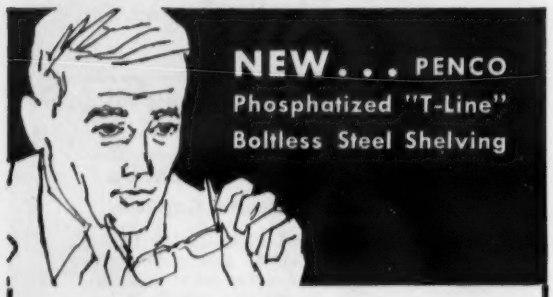
Gives tools, jigs, dies and machines positive rust protection without messy brushing or dipping. Fast, easy and economical to use on highly finished parts stored or wrapped for shipment. Has hundreds of industrial uses.

Price, $15.24 per case of twelve-12 oz. cans f.o.b., Philadelphia, Pa. (sold in case lots only). For immediate delivery write E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

RUST VETO SPRAY ...a product of E. F. HOUGHTON & CO. PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO · TORONTO

Ready to give you on-the-job service

▲ For more details circle NED-161 L9 on enclosed inquiry slip ▲



- 50% faster to install
- 50% faster to rearrange
- added strength
- greater flexibility

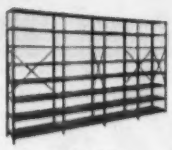
Penco's new Boltless Steel Shelving goes up fast, can be rearranged in seconds. It's the unique precision-formed channel clip that cuts assembly time, speeds rearrangement of shelves.

Available in over 1000 variations. Made of prime steel, phosphate treated and finished in baked-on enamel. Your choice of colors.

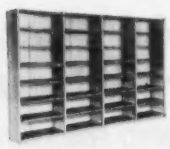
Pick 'em up!

Clip 'em on!

Drop in shelves!



OPEN TYPE



CLOSED TYPE

LEDGE TYPE

WRITE FOR NEW BULLETIN B-40

Design—Types—Sizes—Parts—Features

ALAN WOOD STEEL COMPANY
PENCO DIVISION
406 Brower Avenue, Oaks, Pennsylvania

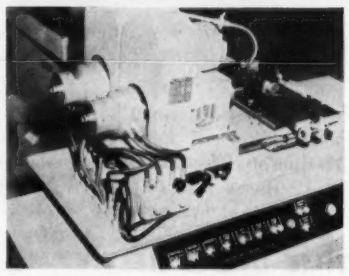
▲ For more details circle NED-162 L9 on enclosed inquiry slip ▲

DIE CUTTER
for sheet and molded materials

Plastics, fabrics, foils, fiberboard, paper, and many other molded or sheet materials are die cut by the Hytronic cutting machine using the swinging beam principle. When electronically tripped, this beam forces the die through the material and onto a conductive cutting surface. When the electronic circuit is completed through the die at the end of its stroke, the beam is instantly reversed. Machine develops a maximum power of 32,000 lb, but actually uses only enough power to insure a clean cut through the material. Maximum stroke is 2¼ in. Four beam sizes and two table sizes meet most applications requiring accurate single or multiple layer cutting. Made by **United Shoe Machinery Corp.**, 140 Federal St., Boston 7, Mass.

▲ For more details circle NED-163 L9 on enclosed inquiry slip ▲

COLLET & CHUCK ACTUATOR
mounts on various machine tools



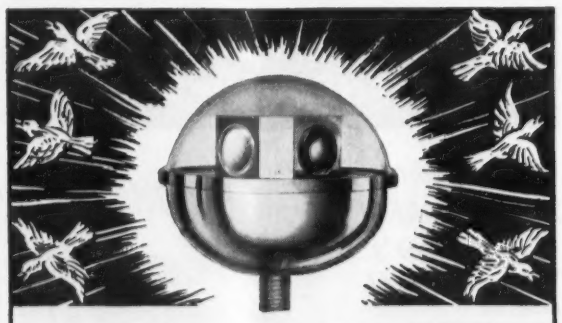
Uniform, controlled holding pressure for machining or grinding precision parts is provided by the Model 3A actuator, a nonrotating air cylinder used to operate collets, step chucks, and expanding mandrels. A flow control valve prevents draw-back of the work when the collet is closing. Used on lathes, grinders, and boring machines, the actuator is mounted directly on the machine spindle without an adaptor plate. The stationary aluminum air cylinder is connected through ball thrust bearings to the machine's spindle and draw tube. Model 3A has a ¾-in. stroke, maximum draw bar pull at 80 psi of 1096 lb, and is suited for maximum spindle speed of 6000 rpm. Made by **PowerGrip, Inc.**, Rockfall, Conn.

▲ For more details circle NED-164 L9 on enclosed inquiry slip ▲

Casters & Wheels

Rapids-Standard Co.—40-page Catalog DP104 outlines a line of casters and wheels and introduces a new 5400 heavy duty series and the new Rapistan pneumatic series. Two-page index simplifies checking caster or wheel specs for any particular application. Rapistan caster line ranges from general through heavy duty.

▲ For more details circle NED-165 L9 on enclosed inquiry slip ▲



It's for the BIRDS!

STOP COSTLY WAREHOUSE DAMAGE...
Flash the MARK VIII Bird Eliminator

Now, bird damage so expensive to packaged goods, sheet steel, machinery, grain and other merchandise stocked inside warehouses can be eliminated! This light covers 360° like an airplane beacon with dual colored beams at the rate of 200 a minute. The roving rays continuously disturb the birds, interrupting their feeding and nesting to the extent that they do not remain. Lifetime vitreous enameled housing can't corrode. Operates on 115-120 V, is easily installed and has a 2000-hour bulb.

Get the Facts—Write TODAY!

TRIPPE MANUFACTURING CO.
133 N. Jefferson, Dept. F-3, Chicago 6, Ill.

▲ For more details circle NED-166 L9 on enclosed inquiry slip ▲

LARGE WORK SPACE
Bench Oven 3' x 3' x 3'

Another
GRIEVE-HENDRY STANDARD

Well constructed, efficient Bench Oven with Large Work Space. Especially adaptable to production line work on large units that require heat processing. Work space 36" x 36" x 36". Temperature range to 350° F. 1250 CFM forced air circulation. Stand available. Construction changes to suit needs. No engineering charges. Write for bulletin 2-157.

Quick Quotations Prompt Delivery Reasonable Prices on Ovens Built to Specifications

OTHER STANDARD MODELS — TO 1000° F—
$121.50 AND UP

Specialists in Heat Process Equipment

GRIEVE-HENDRY CO.
1353 N. Elston Ave., Chicago 22, Ill.

▲ For more details circle NED-167 L9 on enclosed inquiry slip ▲

3 WAYS YOU SAVE TIME
with this New, Low-Cost
AIR REEL

NEW, low-cost GRACO Air Hose Reel has three-way utility to save time and effort in using air-powered hand tools! Runs free . . . stops at 9 in. intervals . . . or adjusts to balance the tool. Only 12 in. high, 10 in. deep, 5 in. wide . . . it's a money-saving midget! Bolts to wall, post or ceiling . . . includes 15 ft., ¼ in. ID air hose. Gives you more *working* freedom . . . *investigate today!*

RUNS FREE! Allows free-wheeling work within 15 ft. radius. Spring pick-up gives effortless hose retraction.

STOPS! Simple touch of a lever activates ratchet to provide automatic latch stops every 9 ins. . . . 19 stops in all.

BALANCES! Spring tension on hose pickup easily adjusts to counter-balance weight of the tool. Saves muscle power!

See your local supplier or write today for details!

GRACO ENGINEERS AND MANUFACTURERS

GRAY COMPANY, INC. • 117 Graco Square • Minneapolis 13, Minn.
(*See Phone Book Yellow Pages, Spraying, for Local Graco Suppliers*)

▲ For more details circle NED-168 L9 on enclosed inquiry slip ▲

Helicoid Gages give *Sustained Accuracy*, even on the toughest jobs

★ Exclusive Helicoid movement has no gears, no teeth. Shock-proof construction protects accuracy through millions of cycles.
★ Bourdon tubes available in four materials—bronze, steel, stainless steel, and K Monel—won't stretch, crack, or leak.
★ Six cases, including new solid-front safety case, meet every mounting requirement.
★ External pointer adjustment can't be jarred out of position.
★ A complete selection of gages and accessories for hydraulic, chemical, and other service.

Write for Catalog DH-65.

HELICOID GAGES ACCO
Helicoid Gage Division
American Chain & Cable Company, Inc.
929-J Connecticut Avenue • Bridgeport 2, Conn.

▲ For more details circle NED-169 L9 on enclosed inquiry slip ▲

Smooth-Running Timken Roller Bearing Trolleys

WRIGHT Timken Roller Bearing Trolleys (shown), in plain or geared models, provide smooth, safe handling of ¼ ton to 40 ton loads with minimum of effort. Heavy steel side plates and chilled tread wheels revolve on Timken Bearings (two bearings to each wheel). Tapered bearing design absorbs both thrust and radial loads and thereby reduces the work required to move the trolley along I-Beam. Chilled wheel treads wear longer, assure wheel roundness. Wright Self Aligning Roller Bearing Trolleys in ½ ton to 20 ton models are also available.

Write to our York, Pa., office for Bulletin DH-242-B

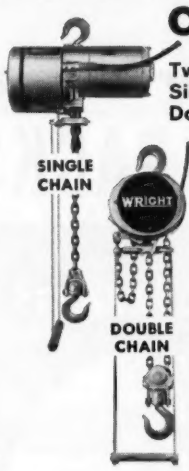
WRIGHT TROLLEYS

Wright Hoist Division • American Chain & Cable Company, Inc. ACCO

York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

▲ For more details circle NED-170 L9 on enclosed inquiry slip ▲

Light, Low-Cost Electric Chain Hoists



Two Capacities:
Single Chain—300 to 2000 lbs
Double Chain—3000 to 4000 lbs

The WRIGHT Electric Chain Hoist has fewer moving parts than any other chain-type electric hoist. Result: hoist working efficiency is increased, maintenance costs are decreased. This rugged, compact hoist features a double braking system—self-locking worm gear reduction, easy to adjust motor brake. Hoisting gears are made of high grade phosphor bronze—worms are heat treated alloy steel. All gears operate in a continual oil bath. Alloy load chain is wick lubricated for long life, heat treated for resistance to wear. Factory tested at 50% of overload.

Write to our York, Pa., office for Bulletin DH-73B

WRIGHT HOISTS

Wright Hoist Division • American Chain & Cable Company, Inc. ACCO

York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

▲ For more details circle NED-171 L9 on enclosed inquiry slip ▲

WRIGHT Safeway Hand Hoists—In 12 Sizes —½ Ton to 50 Tons

WRIGHT Safeway Hand Hoists are built to take it—inside and out. Sealed construction protects all vulnerable parts in high analysis steel housing. Gears, pinions, drive spindle (also top and bottom hooks) are nickel-chrome-molybdenum alloy steel mounted on anti-friction bearings. Gear train is enclosed in oil-tight chamber. Load wheel, with 5 or more pockets, can be reversed for double life. Alloy steel load chain is heat treated to resist wear, ductile to withstand shock loads. Weston type load brake. Factory tested at 50% overload. Write to our York, Pa., office for Bulletin DH-164C.

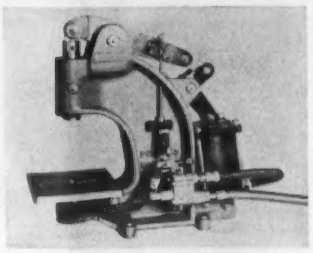
WRIGHT HOISTS

Wright Hoist Division • American Chain & Cable Company, Inc. ACCO

York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

▲ For more details circle NED-172 L9 on enclosed inquiry slip ▲

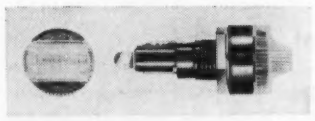
BENCH PRESS-RIVETER delivers 2-ton force on 100-psi air



Using only 100-psi shop air, this Bench Press-Riveter delivers 2 tons of driving force. Toggle power cam and a simple piston-type cylinder achieve a cushioning effect without a cushion. Machine automatically returns to its starting position upon completion of stroke. Unit has a 15/16-in. stroke, a 4-in. throat, and operates at about 200 strokes per minute. It weighs only 58 lb. For industrial use, it is equipped with bed plate which allows use of die shoes, bending forms, and other fabricating tools. As a riveter it handles up to ¼-in. tubular steel rivets. Made by **Trio Machine & Mfg. Co.**, 35690 Vine St., Willoughby, Ohio.

▲ For more details circle NED-173 L9 on enclosed inquiry slip ▲

FUSE POSTS glow when fuse blows

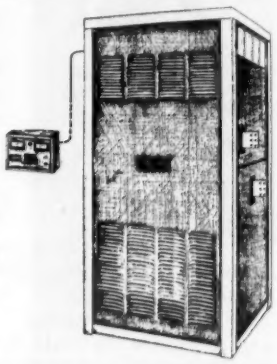


Series 3AG fuse posts with new knob design will glow brightly when fuse blows. They are available for 2½ to 250 v with maximum current rating of 20 amp. Units measure 2⅜ in. long overall and protrude only 1 9/16 in. back of panel. Double flat spots on body afford mounting flexibility. The quick-service bayonet lock has a spring in the cap. Made by **Littelfuse, Inc.**, 1865 Miner St., Des Plaines, Ill.

▲ For more details circle NED-174 L9 on enclosed inquiry slip ▲

DC POWER SUPPLIES in 100-w to 500 kw ratings

Voltage or current furnished by Inductro-Capacitron regulator controlled selenium, germanium, and silicon direct-current power supplies is constant within ±0.01 per cent, regardless of 0 to 100 per cent load variations. Power factor is up to 100 per cent and efficiency, up to 96 per cent. Units are available in ratings from 100 w to 500 kw with normal convection, forced air, oil convection, or oil circulating cooling. Power supplies are designed for electroplating, laboratory, industrial and military, computer, aircraft, machinery, and steel mill applications. Made by **Djordjevic Engineering Co.**, Djeco Div., 1933 N. Damen, Chicago 47, Ill.



▲ For more details circle NED-175 L9 on enclosed inquiry slip ▲

Jib Cranes for Any Requirement

WRIGHT Wall Bracket Jib Cranes are the perfect answer for supplementary use to a regular traveling crane or monorail track—or for individual use in bays, on sides of shops, etc. Hinge plates are fitted with Hyatt Roller Bearings or Bronze Bushings. These and all other fittings are made of annealed electric steel. Double tie rods connected to top and bottom fittings allow for "take-up" without use of turnbuckle. Note: mast not furnished. A complete line of WRIGHT pillar type jib cranes is available. If you like, jib crane fittings can be bought separately for local crane assembly.

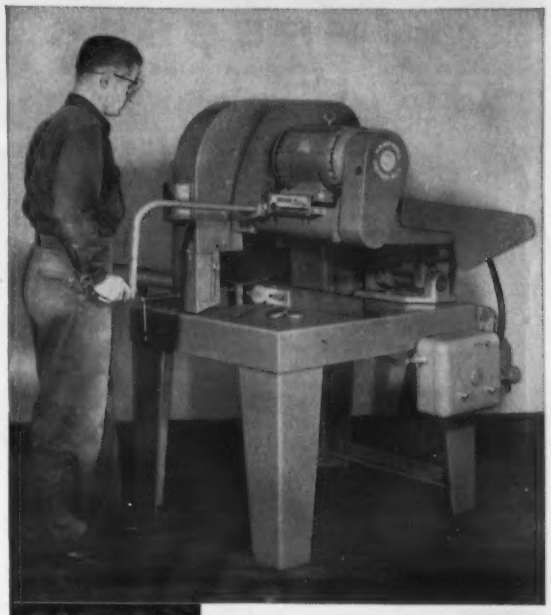
Write our York, Pa., office for Bulletin DH-300

WRIGHT CRANES

Wright Hoist Division • American Chain & Cable Company, Inc. ACCO

York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

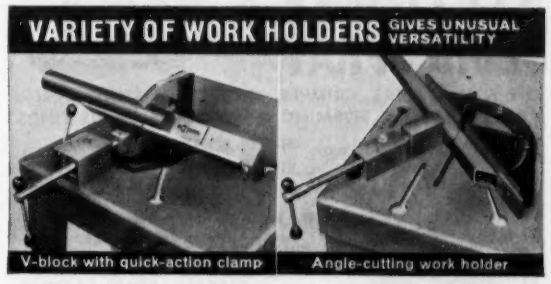
▲ For more details circle NED-176 L9 on enclosed inquiry slip ▲



NEW! GREATEST CUT-OFF CAPACITY IN ITS CLASS!

This newest addition to the Sever-All line of abrasive cutting machines—the Model 2-A—provides greater cutting capacity and more flexibility than any other machine in its class. Check these important advantages: **Big capacity** • cuts 4" round or square solids, 5½" O.D. pipe or tubing, 6" x 1" flat stock, 6" angle iron and 8" channels. Cuts practically all metals. **Fast operation** • accurate cuts at rates of 2 to 3 seconds per square inch. **Power oscillation** • oscillation is the forward and backward motion of the wheel as it is fed down into the cut. It provides extra cutting capacity, longer wheel life, cooler cutting, and reduced operator fatigue. **Quality cuts** • clean, smooth cuts, require little or no finishing operation. **Economy** • specially developed Sever-All wheels provide lowest cost per cut.

VARIETY OF WORK HOLDERS GIVES UNUSUAL VERSATILITY



Choose the work holders you need from several optional arrangements. These include the vise-type holder shown on the machine at top, plus the V-block and angle-cutting fixtures above. Screw-type and quick-action clamping may be used interchangeably.

Write for details on the new Model 2-A Sever-All abrasive cutting machine. Ask for Bulletin DH-299

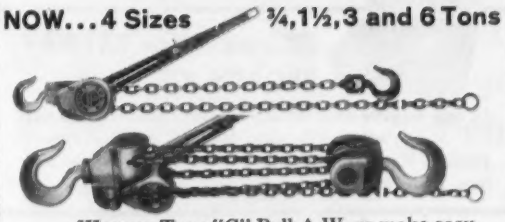
SEVER-ALL ABRASIVE CUTTING MACHINES ACCO

Allison-Campbell Division
American Chain & Cable Company, Inc.
930 Connecticut Avenue, Bridgeport 2, Conn.

▲ For more details circle NED-177 L9 on enclosed inquiry slip ▲

New ¾-ton Type "C" Pull-A-Way

NOW... 4 Sizes ¾, 1½, 3 and 6 Tons



WRIGHT Type "C" Pull-A-Ways make easy work of hundreds of quick hook-up jobs. Now available in four sizes—¾, 1½, 3 and 6 ton—Type "C" Pull-A-Ways are portable, safe and rugged. Corrosion-resistant modern aluminum alloy castings are used for gear case, handle and covers of all models. Hooks, load chain and chain sheave are made of alloy steel. Positive, dependable load brake securely holds load at any point. Lubricated for life. Weights: ¾-ton, 14 lbs; 1½-ton, 23½ lbs; 3-ton, 36½ lbs; 6-ton, 63 lbs.

Write to our York, Pa., office for Bulletin DH-58A

WRIGHT HOISTS

Wright Hoist Division • American Chain & Cable Company, Inc. ACCO

York, Pa., Atlanta, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

▲ For more details circle NED-178 L9 on enclosed inquiry slip ▲

CHICAGO DREIS & KRUMP

PRESSES

STRAIGHT-SIDE TYPE

with large die area capacities up to 400 tons

AND

GAP TYPE PRESSES

Complete recommendations for any job on request

Press Brakes • Straight-Side-Type Presses • Press Brake Dies
Hand and Power Bending Brakes • Special Metal-Forming Machines

DREIS & KRUMP MANUFACTURING CO.
7436 South Loomis Boulevard, Chicago 36, Illinois

▲ For more details circle NED-180 L9 on enclosed inquiry slip ▲

WHEREVER SOMETHING STICKS You'll Find A Use For

IMS

SILICONE FLUID SPRAY

ON FILM SEALERS, CRIMPER JAWS, EMBOSSING ROLLS, PANS; STAMPING, FORMING DIES—MOLDS OF ALL KINDS

SIMPLY SPRAY ON THIS PURE SILICONE FLUID COATING
And your sticking problems are over!

The most economical way to apply costly Silicone Release Agents!

SAFE — NON-TOXIC
CLEAN — LONG LASTING

Handy Self Dispensing Can

Has No-Fumble, Speedy Spray Head

PRICES (Delivered)
Sample Can.....$2.00
Per Unbroken Dozen.....$18.00
Per Unbroken Gross.....$197.40

INJECTION MOLDERS SUPPLY CO.
3514 LEE RD. CLEVELAND 20, O.

▲ For more details circle NED-181 L9 on enclosed inquiry slip ▲

THE WAY TO CUT KEYWAYS

Minute Man KEYWAY BROACH KIT

In one minute and for as little as one cent you can cut a keyway with the Minute Man Keyway Broach Kit. For keyways from 1/16" to 1" in any bore from 1/4" to 3".

SAVE WITH THESE OTHER STANDARD STOCK BROACHES

SQUARE BROACHES — 1/8" to 3/4" holes
HEXAGON BROACHES — 1/8" to 3/4" holes
ROUND BROACHES — 1/4" to 1" holes

SEND FOR CATALOG AND PRICE LIST
The duMont Corp.
Greenfield, Mass.

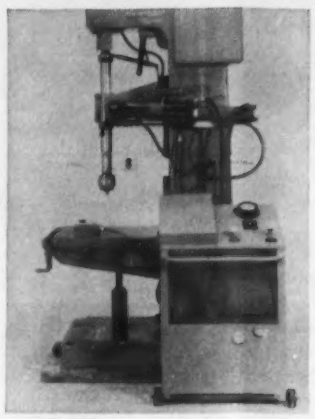
MAIL FREE BROACH CATALOG AND PRICE LIST D describing Square Broaches, Hexagon Broaches, Production Type Keyway Broaches and Keyway Broach Kits to

Name.....
Company.....
Address.....

duMont

▲ For more details circle NED-182 L9 on enclosed inquiry slip ▲

DRILL PRESS FEEDS tailored to machine and work



Economical means of automating drill presses with capacities up to 1½ in. is provided by these self-contained hydraulic feeds. Hy-Cyclic hydraulic solenoid valve control offers a variable and quickly adjustable approach speed, slowdown for work entry, return speed, and working thrust. Unit shown consists of a heavy duty power transmission arm and a wheel-mounted console which houses control valves, hydraulic tank, and pump. Two sizes are available, each tailored to the drill press and the work to be performed. Made by **Beckett-Harcum Co.**, 985 W. Locust St., Wilmington, Ohio.

▲ For more details circle NED-183 L9 on enclosed inquiry slip ▲

Maintenance Equipment

Owatonna Tool Co.—"How to" photographs showing how Grip-O-Matic push-pullers, Power-Twin center hole rams, pumps, and hydraulic shop presses are used to remove and install gears, bearings, pulleys, shafts, and couplings are content of 24-page Catalog P-9. Heavy duty industrial wrenches are also described.

▲ For more details circle NED-184 L9 on enclosed inquiry slip ▲

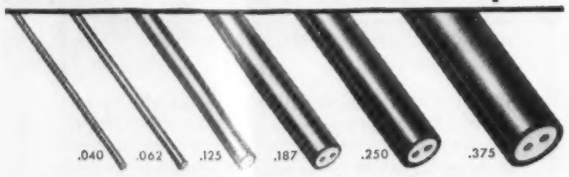
PORTABLE SPACE HEATERS fans propel heated air 30-40 ft

Kerosine or No. 1 or 2 fuel oil is burned under high pressure in Porto-Heat portable space heaters, made in two self-contained sizes producing 120,000 and 240,000 Btu per hour. Each size is available in manual, semiautomatic, and automatic models. Combustion is complete, making the heated air odor-free. A high velocity fan propels the heated air up to 30 or 40 ft. Smaller unit has a 15-gal fuel tank which provides for 17 hr of operation. The rubber-tired heater weighs 115 lb. Larger model operates continuously for 8 hr without refilling the 15-gal tank. Two wheels and a handle facilitate moving the 135-lb unit. All models operate on 115 v, 60 cycles ac. Made by **Emglo Products Corp.**, 116 DuPont St., Johnstown, Pa.

▲ For more details circle NED-185 L9 on enclosed inquiry slip ▲

conax® con-o-clad

mineral insulated thermocouples



All steps of manufacturing and testing Con-O-Clad are in keeping with the Conax policy to produce only *highest quality products.* • Conax is the *only* manufacturer of mineral insulated thermocouples making a complete line of pressure fittings and terminations for entire assemblies ready for installation.

Write for FREE *20 page fully illustrated* DATA BOOK

conax corporation
2326 Walden Ave., Buffalo 25, N.Y.

▲ For more details circle NED-186 L9 on enclosed inquiry slip ▲

40 pages of technical assistance!

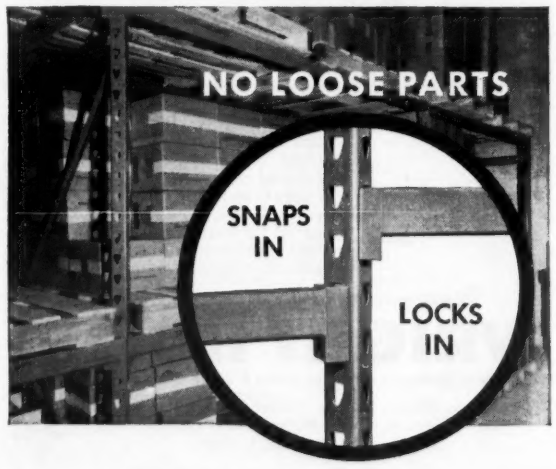
This carefully planned Buyers' Guide is packed with vital information that could save you time and money. It will guide you in the selection of specialty steels by answering, in just seconds, important questions on: Tool and Die Steels • Stainless Steels • High Temperature Alloys • Electronic, Magnetic and Electrical Alloys • Special-Purpose Alloy Steels • Tubing and Pipe • Fine Wire Specialties. **Send today for your free copy.**

The Carpenter Steel Company
118 W. Bern Street Reading, Pa.

▲ For more details circle NED-187 L9 on enclosed inquiry slip ▲

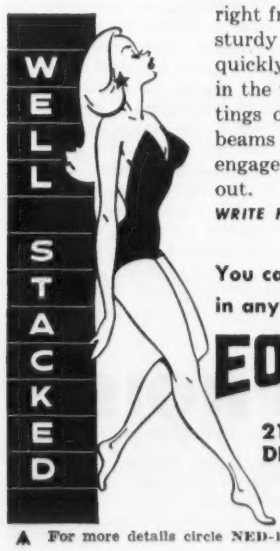
FAST!

EMI *air-row head* FULLY ADJUSTABLE PALLET RACKS



★ EASY TO ERECT
★ ONLY 2 BASIC PARTS
★ SIMPLE TO ADJUST
★ QUICK TO RELOCATE

WELL STACKED



EMI AIR-ROW Head Racks easily adjust to stack pallets, skids, dies and bulk of varying heights. Upright frames are tied together with sturdy steel support beams which quickly snap into AIR-ROW slots in the vertical post. Forge lock fittings on the ends of the support beams insure positive self-locking engagement with no sway or pop-out.

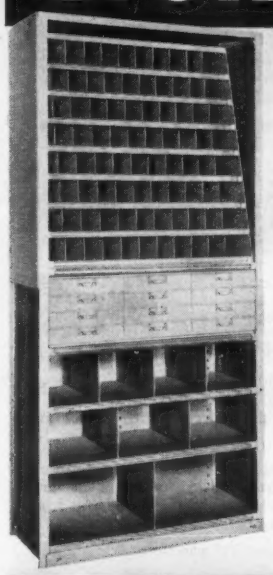
WRITE FOR OUR COMPLETE CATALOG!

You can stack or ship ANYTHING in any industry on EMI racks

EQUIPMENT MFG. INC.
21566 HOOVER ROAD
DETROIT 5, MICHIGAN

▲ For more details circle NED-188 L9 on enclosed inquiry slip ▲

LYON® TOOL SHELVING



COMPLETE RANGE OF TOOL STORAGE UNITS MEETS EVERY REQUIREMENT

The illustration shows one of many combinations of shelving and storage inserts you can custom-build with standard Lyon units. Shelving sections are 3′ wide, 1½′ deep, 7′ high. Shelf dividers are adjustable every inch. No nuts, bolts or tools. Inserts include pigeon hole, sloping front, drawer case and swinging panel units. Finish, green baked-on enamel.

Write for free 84-page Lyon Steel Equipment Catalog.

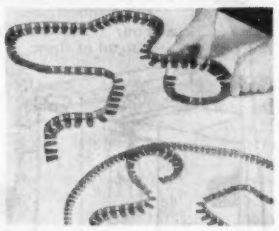
LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Illinois and York, Pa.
Dealers and Branches in all Principal Cities

▲ For more details circle **NED-189 L9** on enclosed inquiry slip ▲

You'll Make These Items *FAST*

GUARDS ENCLOSURES CONTAINERS

. . . with ACROFLEX, the PLIABLE, NOTCHED STEEL STRAPPING



Your maintenance department will find Acroflex as handy as nails and wire. You'll use it to fabricate guards on all dangerous points of moving machinery. Acroflex consists of a series of angular connected links in 8′ or 10′ lengths, with each link pierced to reduce drilling when used with wire mesh or expanded metal. Used for fastening metal to metal, metal to wood, or wood to wood at right angles in numerous shapes.

FREE ADDITIONAL DATA is contained in this folder. Write for your copy today. Ask for bulletin A59.

Territories available for qualified representatives.

ACRO METAL STAMPING COMPANY
340 E. Reservoir Ave., Milwaukee, Wis.

▲ For more details circle **NED-190 L9** on enclosed inquiry slip ▲

LYON® SERVICE CARTS

2 SIZES
30″ long
16″ wide
32″ high
•
36″ long
24″ wide
32″ high

MADE OF LIFETIME STEEL

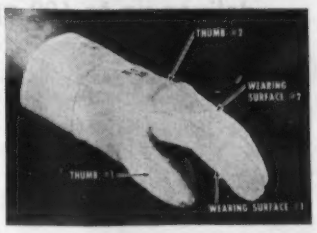
Save steps and time in material handling. Have 5″ diameter composition rubber wheels—2 stationary and 2 swivel. Formed steel tube push bar. 3″ deep, pan type trays. Lyon Green baked-on enamel.

Write for free 84-page Lyon Steel Equipment Catalog.

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Illinois and York, Pa.
Dealers and Branches in all Principal Cities

▲ For more details circle **NED-191 L9** on enclosed inquiry slip ▲

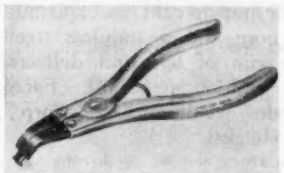
SAFETY MITT
for handling hot or sharp objects



True reversibility with natural positioning of the thumb is featured by this Kelnit Klaw industrial safety mitt. Entire wearing surface of mitt or pad is one piece. Mitt has two thumbs, one of which is tucked into the mitt across the knuckles. When original surface becomes soiled or worn, the hidden thumb is turned out for using the reverse side of the mitt. Used to handle hot or sharp objects, mitt is made from semiporous Iron-Kore fabric which can be laundered or dry cleaned and repaired easily for further service. Each unit can be worn on right or left hand. Made by **Keller Glove Mfg. Co.**, Plumsteadville, Pa.

▲ For more details circle **NED-192 L9** on enclosed inquiry slip ▲

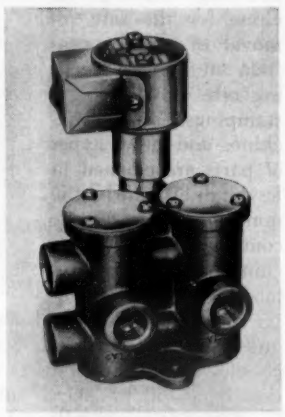
LINK V-BELT TOOL
speeds coupling and uncoupling



Links of V-belts are quickly and easily removed from their studs by the Veelos coupling-uncoupling tool. Squeezing the handles causes the points to grip and open the hole in the link. Heavy gage steel tool has cadmium plated handles, tempered points, and a permanently locked-in-place steel spring. Price is $2.50. Made by **Manheim Mfg. & Belting Co.**, Manheim, Pa.

▲ For more details circle **NED-193 L9** on enclosed inquiry slip ▲

AIR VALVES
momentary contact type



Current is applied to this line of momentary contact air valves only for the instant it takes the valve to change position. It remains in that position with the power off. Dual solenoid unit for use in automated systems prevents the valve from getting out of phase. Additional electrical impulses to solenoid No. 1 will not unlatch the pilot valve. Only by actuating the second solenoid will the valve revert to the normal position. Made by **Barksdale Valves**, 5125 Alcoa Ave., Los Angeles 58, Calif.

▲ For more details circle **NED-194 L9** on enclosed inquiry slip ▲

CONTOUR GRIP

Set up any job in seconds
then take deeper cuts, faster feeds

Makes any tool more productive. Here's why:

Contour Grip is a standard fixture that holds any irregularly shaped part so tightly that you can feed faster and take deeper cuts. Use **any** type tool, eliminate need for costly special-purpose jigs and fixtures. Your operator sets up Contour Grip in seconds, then goes from piece to piece just by backing off the jaws, dropping the next piece in and tightening up. For long runs or short.

The secret of Contour Grip's strength is its individual steel fingers, each of which moves independently as it contacts the work. The fingers mold around the part, and then tighten up **giving greater holding power and a more positive grip than any ordinary fixture can.**

To learn how Contour Grip works and to see the various models available, see your local dealer or contact us direct we'll be glad to send our latest bulletin.

dieco DIE SETS

E. W. BLISS COMPANY
DIE SUPPLY DIVISION
1400 Brookpark Road
Cleveland, Ohio

Available in Canada through John Bertram & Sons, Ltd., Dundas, Ontario.

▲ For more details circle **NED-195 L9** on enclosed inquiry slip ▲

LYON® WORK BENCHES

NEW MODULAR TYPE

Permits individual bench or multiple-bench arrangement to requirements. Steel top, cabinet and four drawers. Drawers are 15¾″ wide, 20″ deep, 6¾″ high. Available with pressed wood or hardwood top, if desired. 28″ deep, 34″ high and 60″ or 72″ long.

Write for free 84-page Lyon Steel Equipment Catalog.

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Illinois and York, Pa.
Dealers and Branches in all Principal Cities

▲ For more details circle **NED-196 L9** on enclosed inquiry slip ▲

VULNERABLE CIRCUITS NEED

LIQUATITE®
FLEXIBLE CONDUIT PROTECTION

Liquatite insures against costly down time due to wiring failure. It protects against contamination, vibration, motion and shock; proves ideal for "wet locations," around corrosives or where severe punishment may cause shorts or burn-outs.

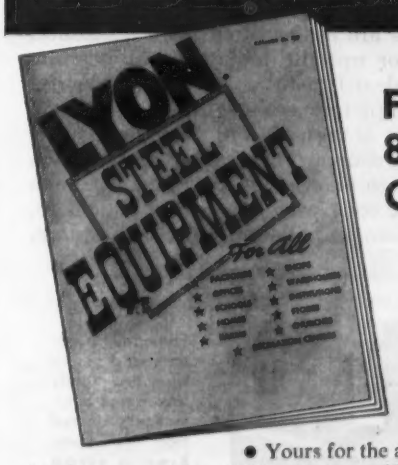
Added to this, Liquatite installs as easily as Flexible Conduit—follows contours, takes small radius bends necessary for hard-to-get-at locations.

Write today for free sample, costs and name of Distributor nearest you.

ELECTRI-FLEX COMPANY
P.O. BOX 128H • ROSELLE, ILLINOIS

▲ For more details circle **NED-197 L9** on enclosed inquiry slip ▲

LYON STEEL EQUIPMENT



FREE! 84 Page Catalog

• Yours for the asking . . . this latest Lyon catalog #100. 84 pages illustrating and describing in detail the world's most diversified line of steel equipment. Whatever your steel equipment requirements, this Lyon catalog will help you fill them better. Send for your copy today.

LYON METAL PRODUCTS, INC.
General Offices: 122 Monroe Ave., Aurora, Illinois
Factories in Aurora, Illinois and York, Pa.
Dealers and Branches in all Principal Cities

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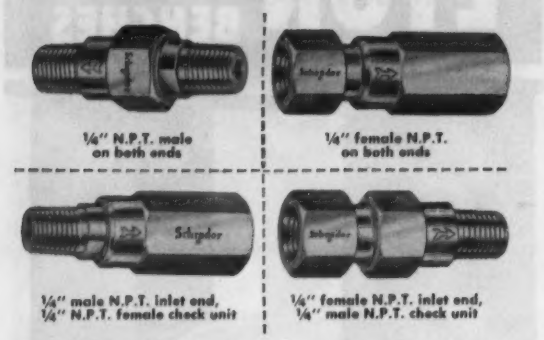
NEW AIR CHECK VALVES



. . . have spring loaded check to assure positive sealing action at low pressures

. . . extremely compact, relative to large flow capacity

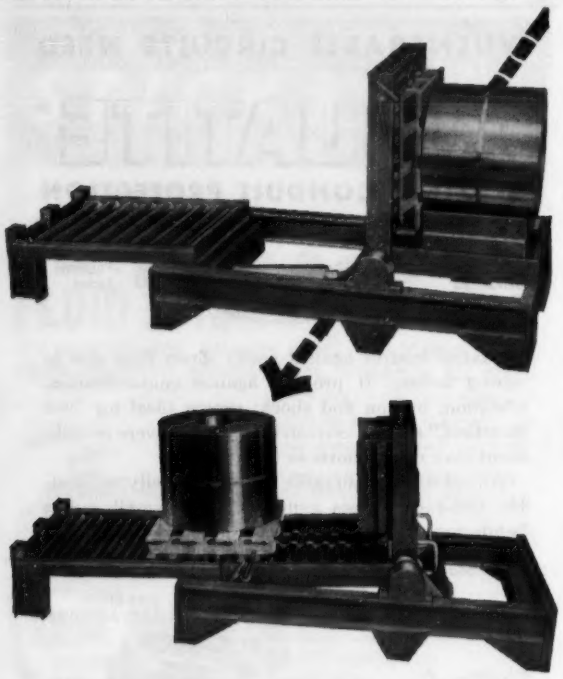
Permit air flow in one direction and check air flow in opposite direction. Long, trouble free service assured by generous seating area between metal check and oil resistant washer. All metal parts are of brass, or heavily plated for corrosion resistance.

Informative literature available on these and hundreds of other Schrader Air Products. Direct all your questions on air control to Schrader, headquarters for up-to-the-minute information.

Schrader®

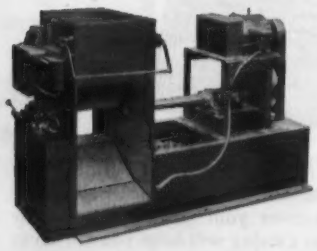
A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Inc.
459 Vanderbilt Ave., Brooklyn 38, N. Y.

For more details circle NED-199 L9 on enclosed inquiry slip



Coil tilting made easy with these portable self-contained tilters

Coils of steel, tinplate, brass, aluminum and other metals are easily tilted from horizontal to upright or upright to horizontal position with the Salem-Brosius line of portable coil tilters. Completely self-contained, they are hydraulically actuated from a single electric motor power source. They can be moved from one position to another in the plant by crane and will tilt coils weighing up to 50,000 lb, centering them on pallets up to 66 in. square.



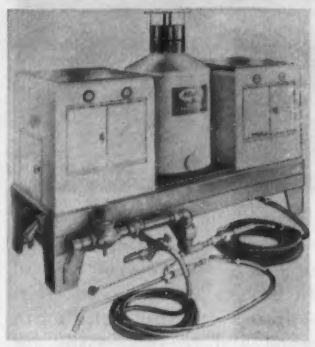
Slitting mill edge-trim and scrap wire are tightly balled and automatically ejected from this Salem-Brosius scrap baller.

SALEM-BROSIUS, INC.
16 Arch Street • Carnegie, Pa.

In Canada: Salem Engineering Limited • 1525 Bloor St. W. Toronto 9, Ontario

For more details circle NED-200 L9 on enclosed inquiry slip

CLEANING-PHOSPHATIZING UNIT direct-fired and fireless models deliver up to 600 gph of solution



Mark IV steam and phosphatizing machine is offered as a direct-fired model fueled with natural, manufactured, or LP gas; and as a fireless model which draws live steam from the plant steam lines. Direct - fired model (shown) consists of a round heat exchanger (eliminated in the fireless model), flanked by two rectangular units. The unit at the left has two solution tanks, one for an alkaline steam cleaning composition and the other for a neutral cleaner used to achieve simultaneous cleaning and phosphatizing. Unit at the right has an acid phosphate solution tank.

Each unit has a 300-gph corrosion resistant pump capable of delivering its full output hundreds of feet away. Phosphatizing unit delivers 600 gph of solution heated to 190-200° F or hot or cold water at 90-100 psi through a ¾-in. hose and a stainless steel nozzle. Hy-Vel nozzle on gun of left unit delivers 300 gph of steam cleaning solution at 85 psi. Each gun is controlled at the nozzle. Made by **Kelite Corp.**, 81 Industrial Rd., Berkeley Heights, N. J.

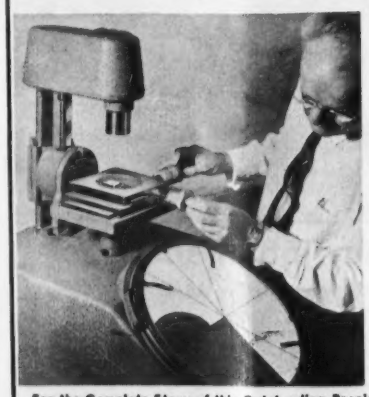
For more details circle NED-201 L9 on enclosed inquiry slip

AGITATING-CLEANING MACHINE removes cyanide salts, quench oils

Magnus 61 - DRX, a strongly alkaline cleaning compound, is employed in the Miji-Lif agitating - cleaning machine for the safe removal of sodium cyanide salts and quenching oils. Castings, stampings, screw machine, and other types of parts are cleaned in less than 20 min by the nonfuming caustic compound in the machine. It is readily removed with a hot water rinse. Compound will not cause corrosion if trapped, and will also strip light corrosion and rust. Method couples immersion of parts with a 15 to 20-min agitation in a 180 to 200° F solution. Concentration is 8 oz of 61-DRX per gallon of water. Machine and compound made by **Magnus Chemical Co.**, Dept. NED, South Avenue, Garwood, N. J.

For more details circle NED-202 L9 on enclosed inquiry slip

Be Sure... Be Safe... Inspect by Projection!



SCHERR MICRO PROJECTOR
Self-Contained Model
with the VERTICAL DESIGN

Get the full story of this outstanding tool . . .

For the Complete Story of this Outstanding Precision Tool — Contact any of our 3 "Coast to Coast" Locations or your nearest Local Distributor.

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PRECISION MEASURING TOOLS AND INSTRUMENTS

Eastern Office: GEORGE SCHERR CO., INC.
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West Coast Office: SCHERR-TUMICO CO.
3337-39 West Olympic Blvd. • Los Angeles 19, Cal.

For more details circle NED-203 L9 on enclosed inquiry slip

ADD DEPENDABILITY to your product with McGILL® toggle switches

McGill's new 90 series toggle switches rated at 15 amps. ¾ H.P. A.C. easily carry full load in excess of 300,000 operations. Compact in design — only ½" x ½" x 1⅛" — this new switch is available in single circuit or in 2 circuit with center and no off.

ALL Levolier® toggle switches are furnished in molded-phenolic dust tight and vibration-proof cases. You have your choice of wire leads, screw terminals, soldering lugs, or spade terminals on most models.

Available from your electrical wholesaler

Send for McGILL Catalog No. 84.

engineered electrical products
McGILL®
precision needle roller bearings

McGILL MFG. CO INC., Electrical Div., 151 N. Campbell St., Valparaiso, Ind.

For more details circle NED-204 L9 on enclosed inquiry slip

A modern truck for modern plants
The HydroLectric
with most modern features

- Two Drive Wheels instead of one
- Braking with handle in any position
- Four Wheel Stability instead of three
- Alloy Gear Transmission instead of chains
- 100% more Steering Ease —Greater Maneuverability
- 50% less Maintenance —Easy Accessibility
- Greater Tire Capacity —Equivalent Load Ratings

• *Write for Bulletin KP*

A TRUCK FOR EVERY PURPOSE AND MATERIAL

For more details circle NED-205 L9 on enclosed inquiry slip

FLAMELESS HEAT BLOWER

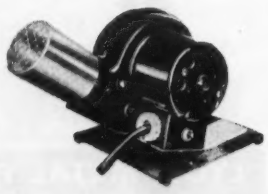
FOR QUICK HEAT UP TO 1000° F.

For applications requiring quick concentrated heat blast up to 1000° F. without flame. Soften, form, mold and patch plastics, etc. Temperature varied by air intake adjustment. 110-120 V. AC-DC motor, 8 ft. heavy duty cord. Intermittent duty. $37.50.

Other models available with lower temp. ranges

Most of the big names in industry use MASTER in laboratories or in production

AIR HEATER BLOWER



For quick electrically heated air up to 500° F. For accelerating drying processes or for localized heating. B.T.U. 3400. Air velocity 2000 FPM. 110-130 V. AC only. 8 ft. heavy duty cord. Continuous duty. 2" dia. x 3" long discharge nozzle.

Order through your local laboratory or industrial supplier or direct.

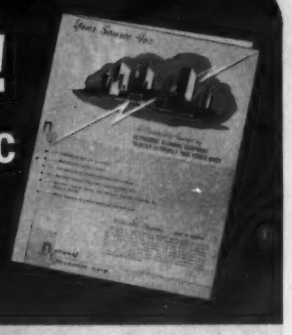
300° F.—1000 Watts $37.50
500° F.—1400 Watts $39.50

MASTER Appliance Corp., Racine, Wisconsin

For more details circle NED-206 L9 on enclosed inquiry slip

FREE!

ULTRASONIC CLEANING BULLETIN



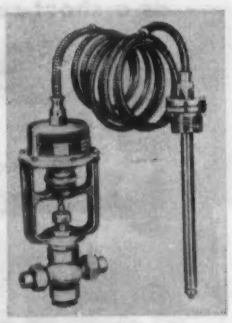
Describes National Ultrasonic Corporation's:

- Applications Laboratory service. Your sample parts are cleaned ultrasonically and equipment and cost recommendations are made at no charge.
- STANDARDLINE medium power cleaners for all applications requiring average energy levels.
- HEAVYDUTYLINE high power cleaners for industrial applications requiring high energy density.
- NUclean solvents and detergents especially formulated for ultrasonic cleaning.

NATIONAL ULTRASONIC CORP.
111 Montgomery Ave., Irvington 11, N. J.
ESsex 1-0550 • TWX NK 1030

▲ For more details circle NED-207 L9 on enclosed inquiry slip ▲

TEMPERATURE REGULATORS
control heating, cooling fluid flow



Vapor pressure operated Cash-Acme Type TC and TCX temperature regulators can be supplied as direct-acting units for heating applications, or reverse-acting units for cooling uses. Applications include water heaters, fuel oil preheaters, fuel oil coolers, and storage tanks. Type TC has bronze bodies in sizes from ¼ to 2 in. with union connections, and in iron or bronze bodies from 2½ to 5 in., with 125-lb ASA flanged ends. Temperature ranges are from 25 to 385° F in 40° F increments. Type TCX in sizes from ¼ to 2 in. has bronze bodies and union connections. It is offered in 70° F increments in a 50 to 310° F range. Capillary tubing, cable, temperature bulbs, and wells for both types are supplied in various metals. Made by **A. W. Cash Valve Mfg. Corp.**, Wabash & Morgan, Decatur, Ill.

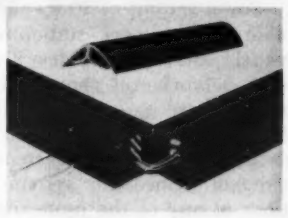
▲ For more details circle NED-210 L9 on enclosed inquiry slip ▲

SHORT-RUN MARKER
uses direct or offset process

Short-run quality imprints can be made on flat, curved, or irregular surfaced parts, packages, or labels with the Model 135 A Companion marker. It applies up to 2 x 3-in. imprints by either direct (objects up to 1½ in. thick) or offset process (objects up to 4½ in. thick). Rubber plates or zinc etchings can be used when imprint changes are infrequent, otherwise Masterplates with quick-change type inserts are preferable. Various ink formulas for air drying, baking, or firing, or for use on various materials are available. Made by **Markem Machine Co.**, Keene 73, N. H.

▲ For more details circle NED-211 L9 on enclosed inquiry slip ▲

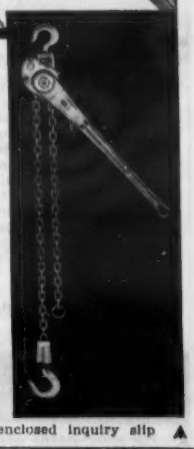
CHANNEL WIRING ACCESSORY
forms curved raceway corners



Rounded raceway corners are provided by the Corner Strip channel wiring accessory. It is grooved on one side to slip onto ends of two Panel Channel sections set at right angles. Strip is furnished in 6-ft lengths and can be cut to required size. Made by **Stahlin Brothers, Inc.**, 460 Maple St., Belding, Mich.

▲ For more details circle NED-212 L9 on enclosed inquiry slip ▲

NEW COFFING SEALED HOIST
For Efficient Hoisting in Any Weather



Here is a new hoist designed for safe, efficient hoisting in any weather. Loads will not slip because the brake mechanism is permanently sealed in five places against moisture, oils, chemicals and dirt —all common causes of hoist slippage.

The spring-loaded Neoprene seals assure that brake performance will remain constant under all exposure conditions.

Safety features include the exclusive Safety Handle which bends to indicate overload. The free chain control is protected so that it will not accidentally trip.

Five models, ¾, 1½, 3, 4½ and 6-ton capacities are available. Ask your distributor for Bulletin ADH-78. **Coffing Hoist Division, Duff-Norton Company, 803 Walter Street, Danville, Ill.**

▲ For more details circle NED-213 L9 on enclosed inquiry slip ▲

KEEP PNEUMATIC CONTROLS FROM CLOGGING

Dollinger Staynew Filters "capture" all dirt, oil droplets, and moisture . . . allow only clean dry air to pass into delicate controls of transmitters, amplifiers, recorders, etc.

Staynew Model CPHB-4D offers peak efficiency (5-6 microns) at pressures to 150 p.s.i., temperatures to 100°F. Made of lightweight, durable die-cast aluminum . . . bracket provides easy installation . . . single bolt assembly for easy maintenance.

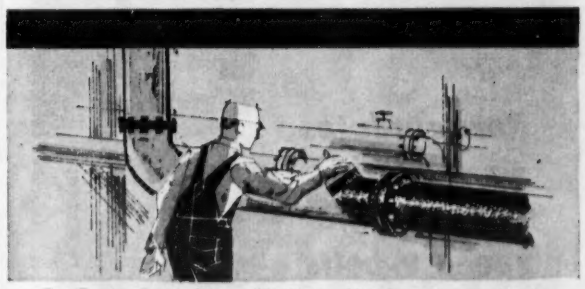
Available for ¼", ⅜", and ½" pipe connections. See your local Dollinger representative, or write for engineering data sheet. Dollinger Corporation, 49 Centre Park, Rochester 3, New York.

STAYNEW FILTERS — **DOLLINGER**
Specializing in dry type filters for 35 years

▲ For more details circle NED-208 L9 on enclosed inquiry slip ▲

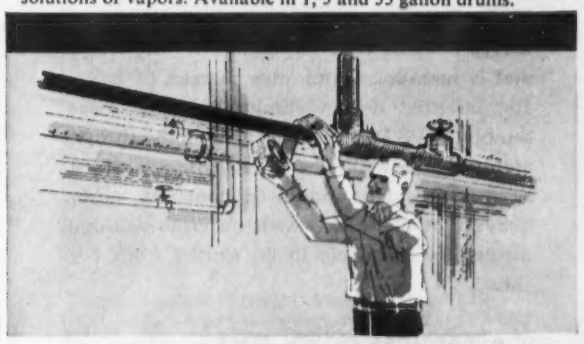
END ALL DRIP AND RUST PROBLEMS IN YOUR PLANT THESE TWO PROVEN WAYS!

Industrial plants know Mortell products offer more positive protection than any other drip-and-rust preventive. Maintenance men know that paints or compounds of paint and fish oil provide little or no permanent protection. Rust-inhibiting NoDrip Plastic Coating is a moisture-proof insulation that *does* stop condensation . . . forms a seamless jacket . . . *does* stop corrosion. NoDrip Tape, with its triple insulating barrier, is equally dependable.



For Tanks, Large Pipes, Air Ducts, Metal Equipment, Walls, Ceilings, Permanently End Condensation Drip, Rust and Corrosion With NoDRIP PLASTIC COATING

The heavy consistency of NoDrip outlasts many coats of paint or ordinary rust-preventives. Permanently insulates and protects. Applies easily with trowel, brush or special spray. Non-toxic, odorless and non-flammable. Resists acid, alkali, brine solutions or vapors. Available in 1, 5 and 55 gallon drums.



For Smaller Pipes or Tubing, Permanently End Condensation Drip, Rust and Corrosion With NoDRIP TAPE

An easy-to-use, wrap-around pipe covering, perfectly pliable, cork-filled, completely self-adhering. Forms an air-tight, 100% vapor- and moisture-proof jacket. Fits snugly even around tees, unions, angles, valves. Cuts maintenance costs—makes out-of-the-way storage areas useable—ends slip and slide floor hazards. No need for vapor seals, brads, fasteners or tools of any kind.

At all leading hardware, mill supply and plumbing jobbers. For complete information and technical handbook, write

Mortell COMPANY
526 Burch Street · Kankakee, Illinois

▲ For more details circle NED-214 L9 on enclosed inquiry slip ▲

if it flows . . .
THERE'S A GENERAL CONTROLS SOLENOID VALVE TO CONTROL IT!

Oil, gas, water, steam, corrosive fluids, refrigerants—makes no difference what you're handling . . . General Controls has a solenoid valve to do the job. The General Controls line is *complete* . . . pressure range from 0 to 3000 psi in normally open, normally closed, shut-off, 3-way and 4-way valves. And this *single reliable source* can save you time and money . . . by delivering a quality product—backed by factory-trained field service representatives where and when you need them. Call on the man from General Controls for help in solving your automatic control problems. Nine plants . . . 44 factory branch offices at *your* service.

GENERAL CONTROLS
Automatic Controls for Product or Process
Glendale, Calif. · Skokie, Ill. · Guelph, Ontario, Canada
Nine Plants — 44 factory branch offices serving the United States, Canada and Western Europe

▲ For more details circle NED-209 L9 on enclosed inquiry slip ▲

FOR QUICK CONNECTION and DISCONNECTION OF AIR CIRCUITS—

Here's the Coupling for the job

HANSEN Series RL QUICK-CONNECTIVE Ring-Lock Coupling

Write for the Hansen Catalog

Here is an always ready reference when you want information on couplings in a hurry. Lists complete range of sizes and types for compressed air, hydraulic fluids, oil, grease, water, vacuum, steam, oxygen, acetylene, refrigerants, gasoline, coolants, and LP-Gas.

Instant Automatic Flow or Shut-Off

Handles More Air —with Minimum Pressure Drop

Representatives in Principal Cities

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 35, OHIO

For more details circle NED-215 L9 on enclosed inquiry slip

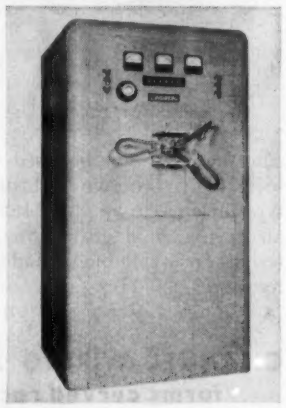
OFFICE COPIER serves both as copier and as a short-run duplicator

Automatic, pushbutton operated Xerox 914 office copying machine is in many respects similar to a short-run duplication machine. Required number of copies of any written, drawn, typed, or printed document up to 9 x 14 in. in size is made simply by setting a dial. Unit operates on the fast, dry, electrostatic principles of xerography, producing black-on-white, print-like copies.

Machine will also copy from bound books or magazines. Prints can be made directly on ordinary white or colored paper, offset paper master material, card stock, or vellum. It will be available for purchase or for lease at monthly charge of $95. Cost of consumable supplies, including ordinary paper, runs about 1 cent per copy. Made by **Haloid Xerox Inc.**, Box 1540, Rochester 3, N. Y.

For more details circle NED-217 L9 on enclosed inquiry slip

INDUCTION HEATING UNIT 10-kw unit for processing conductive materials operates at 4 megacycles



Model LI-10C-1 high frequency induction heating unit is designed for processing semiconductor and other conductive materials. It operates at about 4 megacycles on power input of 230/460 v, three-phase, 60 cycles. Power consumption is 20 kva maximum at 90 per cent power factor. Power for Type 6420 water-cooled oscillator tube is obtained from six Type 575-A mercury vapor rectifier tubes.

Power output of 10 kw, 568 Btu per minute, is available at one work station centrally located on front panel. Station provides 1 x 1½-in. copper bus bars with a work coil connection that eliminates need for rubber hose to cool the coil. Water consumption at full load is 6 to 7 gpm at 80° F. Front meters monitor oscillator tube plate current, grid current, and plate voltage. Checklite system reveals abnormal conditions at any of the protective devices. Made by **Lindberg Engineering Co.**, 2450 W. Hubbard St., Chicago 12, Ill.

For more details circle NED-218 L9 on enclosed inquiry slip

Wait a minute! adding to your warehouse?

Has it ever occurred to you that you may have sufficient space—if you can put it to proper use?

Let PALTIER trained Materials Handling Engineer take a look. With properly selected equipment and flow of materials your present storage area may be adequate! Storage equipment COSTS LESS than NEW FLOOR SPACE!

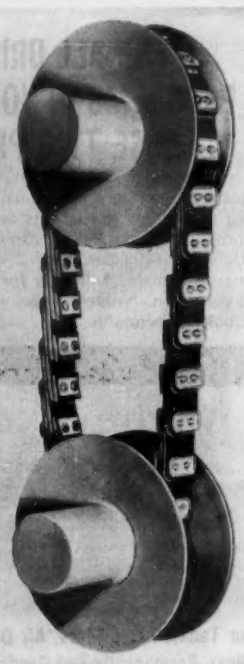
PALTIER STORAGE SYSTEMS are designed jointly by industrial architects, structural and materials handling engineers.

Write today to . . .

THE PALTIER CORPORATION
1705 Kentucky Street • Michigan City, Indiana
DISTRIBUTORS IN PRINCIPAL CITIES

For more details circle NED-220 L9 on enclosed inquiry slip

NEW! MANHEIM VARIABLE SPEED BELT



Now outdates wood block and variable speed v-belts

Replaces Enclosed Drive Belts without Disassembly

MVS Belt sets a new standard in V-to-V drives because it is adjustable to any length and is installed in minutes instead of hours. Its patented design eliminates drive disassembly. MVS Belt is placed around the sheaves and coupled with T-screws. Uniform thickness and width guarantee constant power delivery at all speeds with no cross-sectional distortion. Available in 26 widths from 1½" thru 5".

- REDUCES DOWN-TIME FROM HOURS TO MINUTES
- ADJUSTABLE TO ANY LENGTH
- EXACT SPEED CONTROL
- UP TO 90% LESS VIBRATION

Write Today for Complete Information.

MVS MANHEIM MANUFACTURING & BELTING COMPANY Manheim 4, Penna.

©M. M. & B. Co. 1958

For more details circle NED-216 L9 on enclosed inquiry slip

RENFROE LINE

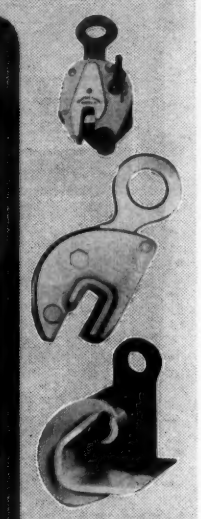
STEEL LIFTING CLAMPS

- 14 different designs
- ½ Ton to 20 Ton Capacity
- 5 to 1 Safety factor
- All clamps safety tested
- 3 to 1 before shipment

Special design clamps available on request

Safety Snap Lock

Write for Renfroe catalogue



J. C. RENFROE & SONS, INC.
1926 SPEARING ST. • JACKSONVILLE, FLORIDA

For more details circle NED-221 L9 on enclosed inquiry slip

Resists Acid Damage and Protects Against Static Hazards!

NATIONALLY KNOWN UNION MADE CHEM-WEAR

100% Dynel Anti-Static Industrial WORK CLOTHES

NOW . . . CHEM-WEAR work clothes will solve all plant problems of acid damage and static hazards. And, these always comfortable work clothes do not support combustion! Wear CHEM-WEAR Shirts, Trousers, Coveralls, Laboratory Coats, Work Aprons and be safe.

HOODED COVERALLS
For Boiler Maintenance Men
Heavy blue denim. Completely covers from head to foot.

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If Not Available at Your Safety Dealer Write to

M. SETLOW & SON, Inc.
Quality Since 1896
MAIN OFFICE & PLANT: 131 Chestnut St., New Haven, Conn.

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FULL CONE—HOLLOW CONE—FLAT SPRAY

Spraco has the most complete line of nozzles available anywhere — IN STOCK. Capacities range from ⅛ pint/min. to 4000 gal./min. Bronze, cast iron, and stainless steel. Write for our nozzle catalog.

SPRAY ENGINEERING CO., *106 Cambridge St., Burlington, Mass.*

For more details circle NED-222 L9 on enclosed inquiry slip

Fast Deliveries

custom engineered wire rope assemblies

Fittings of every type . . . standard or unique construction in all alloys . . . 002" to 1.0" diams. . . . 50' or 500,000' . . . checked and tested at every step of fabrication.

SPECIALISTS IN THE UNUSUAL

SEND FOR ASSEMBLY CATALOG, CA-1

BERGEN WIRE ROPE COMPANY
502 GREGG STREET, LODI, N. J.

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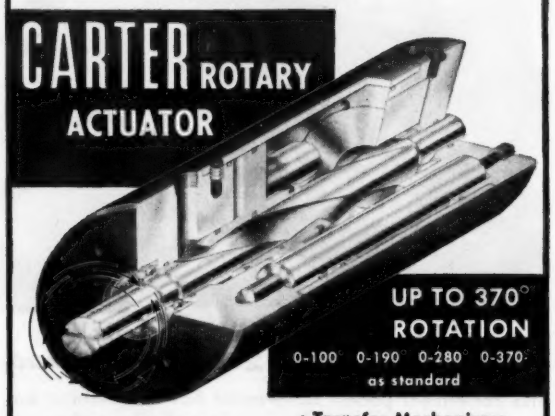
SOLVE ROTARY MOTION PROBLEMS

CARTER ROTARY ACTUATOR



UP TO 370° ROTATION
0-100° 0-190° 0-280° 0-370° as standard

- SAFE, LEAKPROOF PERFORMANCE
- BUILT IN CUSHIONS
- OIL, AIR, WATER OR GAS
- Transfer Mechanisms
- Indexing
- Positioning
- Valve Operation
- Cam Actions

SEND FOR NEW BULLETIN RA-500 Complete Details and specifications. All essential design data. Send today!

CARTER CONTROLS, INCORPORATED
2876 Bernice Road, Lansing, Ill.
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BOWSER

PORTABLE WHEEL TANK

TRANSPORTS LIQUIDS . . . . QUICKLY . . . . SAFELY

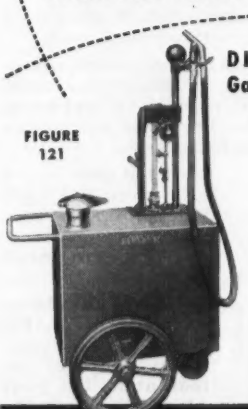


FIGURE 121

DISPENSES AND REGISTERS
Gallons, ½ Gallons, Quarts, Pints

Oils, solvents, process liquids . . . are all transported quickly, easily, safely . . . and dispensed accurately in controlled quantities. A piston-type measuring pump with counter records up to ten gallons and repeats or resets. Protecto-Seal fill-and-vent with built-in flame arrestor assures safe handling of flammable liquids. Anti-drip nozzle. 50-gallon tank. Convenient delivery hose.

ALSO AVAILABLE . . .

Figure 63 Measures quart, pint, or ½-pint. Anti-drip nozzle. Pump is lockable. 65-gal. tank.

Figure 172 Completely enclosed. Hinged, lockable cover. Same pump and tank as Figure 63.

Figure 41 Floor stand pump for low-level tanks. Measures gals., ½ gals., qts., pints. Lockable.

Figure 109 Dispenses and records gal., ½ gal., qt. and pt. quantities. 65 or 120-gal. tank.

BOWSER, Inc., 1381 EAST CREIGHTON AVENUE FORT WAYNE, INDIANA

▲ For more details circle NED-225 L9 on enclosed inquiry slip ▲

ORBITAL AIR SANDER operates at 8500 rpm

Air motor powered orbital air sander operates at 8500 rpm for fast, efficient finishing of metal, wood, plastics, and other materials. It operates quietly and with minimum vibration on normal air line pressure and sands close to edges. Lever control conforms to natural contours of hand for comfortable handling. Abrasive holder snaps open and closed to grip a standard 3 2/3 x 9-in. sheet. Made by **Aro Equipment Corp.**, Erie Street, Bryan, Ohio.

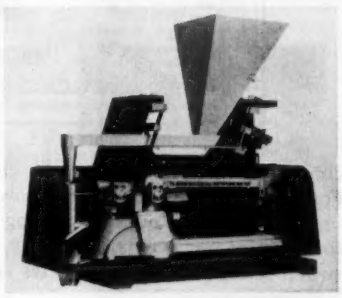
▲ For more details circle NED-226 L9 on enclosed inquiry slip ▲

HIGH INTENSITY STROBOSCOPE covers speeds from 60 to 15,000 rpm

Brilliant blue - white daylight flasher tube of the portable Model 510-AL stroboscope provides sharp images at all speeds from 60 to 15,000 rpm. Flash duration is about 1 microsecond. Instrument operates from 100 to 125-v, 60-cycle power and is accurate to ±1 per cent on high range from 600 to 15,000 rpm. Slow position, covering 60 to 1500 rpm, provides flashing rate of 1/10 scale values. Accuracies of 5 to 7 per cent are then obtained. Made by **Herman H. Sticht Co.**, 27 Park Place, New York 7, N. Y.

▲ For more details circle NED-227 L9 on enclosed inquiry slip ▲

AUTOMATIC BATCH SCALE has 1-100 gram dry material range



Supply hopper, electric vibratory feeder, weigh bucket mounted on the weigh beam, and a small air cylinder for operating the bucket gate are the four basic elements of the Mini-Weigh industrial type automatic scale. It has a 1 to 100-gram range and makes up to 15 weighings per minute of dry materials. Enclosed mechanism minimizes contamination and prevents air currents from influencing operation. Accuracy is within ±1/10-gram of most materials. Scale can be synchronized with other machines and has a remote control box. Special attachments include hoppers, buckets, discharge spouts, counters, cycling devices, and counters. Made by **Glengarry Processes Inc.**, Bay Shore, N. Y.

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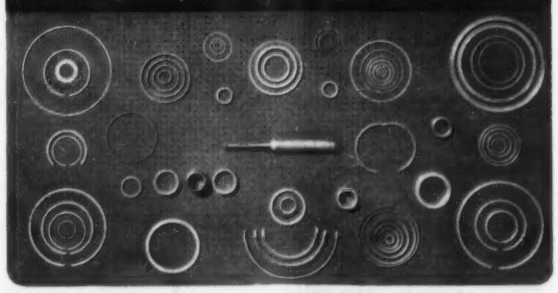
PISTON RINGS for every purpose
AUTO-DIESEL



HYDRAULIC CYLINDERS
COMPRESSORS
STEAM ENGINES
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DIE CASTING MACHINES
SHAFT SEALS
AIRCRAFT—AN SCRAPERS
AND MANY OTHERS

Auto-Diesel has specialized in piston rings since 1921. We have but one thing to offer you—Quality Piston Rings—to your specifications—delivered on time—at attractive prices.

1-9-2-1 AUTO-DIESEL AD CLEVELAND 1-9-5-9

Catalog on Request
THE AUTO-DIESEL PISTON RING CO.
3141 Superior Avenue • Cleveland 14, Ohio

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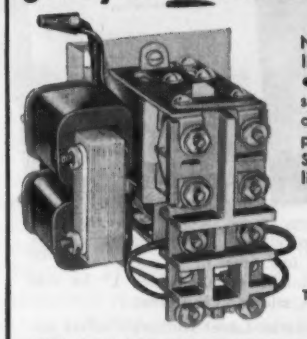
WARRICK Floatless Electrode Type
LIQUID LEVEL CONTROLS . . .
give you all these advantages!



No moving parts in the liquid • Easy to install • No adjustments necessary • Unaffected by acids or caustics • Unaffected by pressure or temperature • Standard 2&3 pole units listed by U/L

Write for 32-page Catalog which gives complete specifications

Two pole control shown at left

YOU CAN USE OUR CONTROLS FOR:
- Single & multiple pumps
- Motor & solenoid valves
- High & low cutoffs & alarms
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- OEM applications

Special controls to custom requirements

CHARLES F. WARRICK CO.
1964 W. Eleven Mile Road, Berkley, Michigan
Dep't 6 Telephone JOrdan 4-6667

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Lug Industrial Pneumatic Tire from Goodyear—a rugged performer from any angle!

NEW VIEW ON TIRE VALUE

Photographed through glass, this rugged Lug Industrial Tire by Goodyear tells quite a story.

Instantly, you see why this tire gives superior traction on slick, slippery surfaces. Goodyear's famous Lug tread design provides that extra *gripping* power—makes this tire ideal for use wherever sure-footed traction is required.

And since this is a *pneumatic* tire, it has the sidewall flexibility, smoothness and flotation that assure safe haulage of cargoes which *must* be handled with care.

There's terrific strength and stamina in this tire, too—provided by Goodyear's 3-T Cord that's triple-tempered in an exclusive process, involving Tension, Temperature and Time, for longer tire life, lower cost in the long run.

GET ALL THE FACTS on the Lug Industrial and the complete line of Goodyear Pneumatic and Solid Industrial Tires from your Goodyear Dealer. Or write Goodyear, Industrial Tire Sales, Akron 16, Ohio.

INDUSTRIAL TIRES BY GOODYEAR

More tons are hauled on Goodyear Truck Tires than on any other kind

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FREE BULLETIN ON MATERIAL-LEVEL INDICATING

. . . tells how you can have complete control and/or indication of the high or low level of dry pulverized or granular materials under 1″ in size passing into or out of bins, silos and bunkers.

The dust-tight Fuller-Material-Level Indicator offers exact audible-visual indication and control despite any momentary surge or settling of material.

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BECKETT Hi-CYCLIC

the valve name you need to know to fill any directional control application!

★ Beckett Hi-Cyclic Valves are sealed by **precision**, metal-to-metal fit. There are no working packings. Only the brass valve body and stainless steel spool are in contact with the media. These valves give **longest service life!**

★ Seven spool types meet all requirements. Special spools to specifications. Short spool stroke gives extremely **fast** reaction.

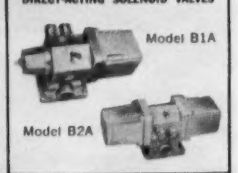
★ Practically every Beckett Hi-Cyclic Valve (more than 150 models) is a variation based upon a compact, basic valve body. By adding suitable actuators, the basic valve is adapted to almost any given situation. Many actuator assemblies can be combined or interchanged, thus making the line of Hi-Cyclic Valves almost **universal** in range of application.

"SPECIALS" WELCOMED!

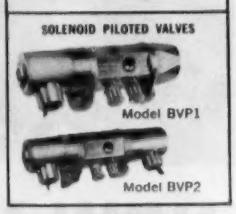
If a standard Hi-Cyclic Valve will not fulfill your needs, we welcome the opportunity to economically design and manufacture the valve to your most exacting specifications.

Write for complete valve catalog or detailed information on Hi-Cyclic Valves to meet your requirements.

DIRECT-ACTING SOLENOID VALVES

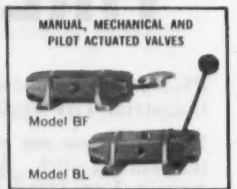


SOLENOID PILOTED VALVES

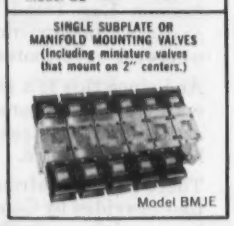


THE COMPLETE LINE OF PRECISION AIR AND HYDRAULIC CONTROL VALVES. N.P.T. SIZES ⅛″ TO 1″

MANUAL, MECHANICAL AND PILOT ACTUATED VALVES



SINGLE SUBPLATE OR MANIFOLD MOUNTING VALVES (including miniature valves that mount on 2″ centers.)



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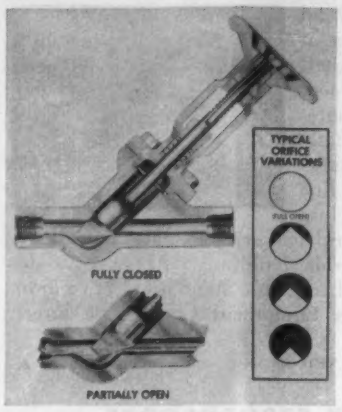
Putrow Indus. Equip.
Norman Eng. Co.

▲ For more details circle NED-234 L9 on enclosed inquiry slip ▲

STRAIGHT-FLOW VALVE
fully open pressure drop is slight

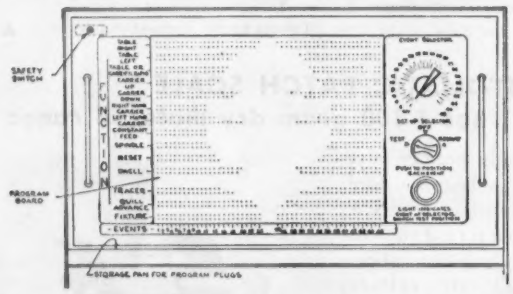


Direct, unrestricted, straight line flow in all throttling positions with little turbulence minimizes pressure drop and friction loss in this control valve for fluids and gases. Large particles of solid material can be passed with little danger of clogging. Flow is regulated by raising or lowering the angled stem, increasing or decreasing the size of the V-groove flow area. Valve is made in carbon steel, stainless steel, and bronze in pressure ratings from 600 to 10,000 psi, and sizes from ⅛ to 4 in. Various types of packings and automatic control for either diaphragm or cylinder actuator are available. Made by **General-American** Valve Co., Box 444, Corona del Mar, Calif.

▲ For more details circle NED-235 L9 on enclosed inquiry slip ▲

MILLING MACHINE CONTROL
functions selected by plugging holes in peg-board type panel

Having the appearance of a simple peg-board the Telematic control panel for the 200 Series Hypowermatic milling machine controls all functions or ma-



chine movements, plus fixture clamping or indexing. For each function there is a row of 24 holes, allowing operator to "peg-in" milling cycles involving up to 24 steps or events in proper sequence. Stepping switch scans board and initiates all functions indicated by peg placement.

Tracer control can be programmed into the cycle as simply as any other machine function, and a stop accurate within 0.001 in. can be pegged in as an automatic function. Several depths of cut can be made in a single cycle by bypassing the trip dogs to reach required depth. Templates, with holes punched to program a specific job, can be superimposed over the panel. Made by **Cincinnati Milling Machine Co.**, Marburg & South Streets, Cincinnati 9, Ohio.

▲ For more details circle NED-236 L9 on enclosed inquiry slip ▲

Free "ideas" booklet . . .

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new products! . . . new ways to up-grade established products!

See how good looking vinyl coatings add new sales appeal, usefulness, durability to consumer and industrial products. Easy to apply on wood, metals, fiber, glass, paper. Dip or spray. Any color. Variety of textures. Potential largely unexplored.

For Free 17-page Illustrated Booklet: Use publication's inquiry card, or mail coupon direct to: Monsanto Chemical Company, Organic Chemicals Division, Dept. PL-20, St. Louis 66, Mo.

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Company _____

Address _____

City _____ Zone _____ State _____

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Airless spraying

Q: *Where is airless spraying best used?*
A: Indoor and outdoor painting maintenance work because there is virtually no overspray.
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A: Yes. These rugged, dependable outfits are available for working from 55- or 10-gallon containers.
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A: Binks gives you the opportunity to objectively compare airless spraying with a number of other techniques.

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9830

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GAGE SURFACE FINISH TO NEW A.S.A. STANDARDS - *Quickly - Accurately*

This convenient pocket comparator has 22 precision surfaces for specifying and controlling finish to the new A.S.A. Standard B46.1 - 1955. Electroformed in durable corrosion-resistant nickel, the S-22 Comparator provides every department with the most inexpensive method for uniform, accurate control of finish characteristics.
Save valuable time in engineering, inspection, quality control—eliminate costly overfinishing in purchasing and production. $17.50 complete with leather case.
Available from leading industrial distributors, or write

FDL **FAIRFIELD DEVELOPMENT LAB., INC.**
(SUCCESSOR TO BAPTIST MACHINE CO.)
40 Ludlow Street, Stamford, Conn.

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New Allis-Chalmers 3,000-lb lift truck gives you

LESS where you want less . . . MORE where you want more

LESS length — only 73 in., less forks.

LESS cost — lowest price in its class. It's a fact!

LESS maintenance — because of heavy-duty engine.

SHORTER wheelbase — only 42 in.

TIGHTER turning radius — only 67 in. outside. Most maneuverable truck by *far*.

Right-angle stacks in **NARROWER** aisles — 79¼ in. plus load length.

MORE stacking height—131½ in. with standard mast.

MORE mast selections — there's a mast for every need. Tri-lift, high-lift and extra-free lift masts are quickly interchangeable.

CHOICE of drive — you can have POWER SHIFT torque converter drive *or* standard constant mesh transmission.

These facts add up to the MOST LIFT TRUCK for your money — any way you look at it. Let your Allis-Chalmers dealer prove it. Allis-Chalmers, Milwaukee 1, Wisconsin.

FTB30-24
3,000-lb, cushion tires

ALLIS-CHALMERS

BH-124

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calculated to adapt easily and perform reliably

IBM manufactures control panel wires for use with their masterfully precise data processing equipment . . . and a bearing ball is one of the wire's key components, ensuring secure contact and smooth insertion and withdrawal. Available in a full range of sizes, Abbott bearing balls are deep hardened to provide a thick armored shell which makes them crush resistant and efficient under high load factors. And the Abbott ball is specially tempered to give it shock resistance and freedom from stresses which cause distortion of sphericity and size.

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THE ABBOTT BALL COMPANY
RAILROAD AVE. HARTFORD 10, CONN

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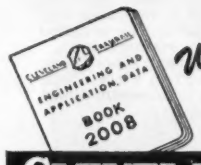
A Cleveland Tramrail overhead crane system permits far more steel being stored in a building because it can be piled high and because wide aisleways required for floor conveyances are not necessary, thus, much of this space can be used for storage. Many warehouses prefer 5-ton cranes to take advantage of economies gained on purchase and handling of 5-ton packages.



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CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6656 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

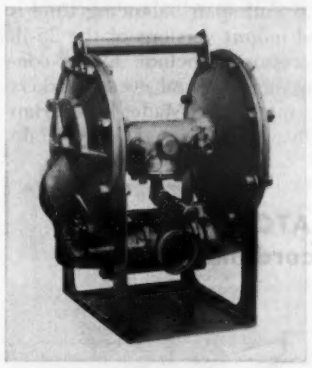
▲ For more details circle **NED-242 L9** on enclosed inquiry slip ▲

MAGNET-HELD WARNING LIGHT for plant vehicles

Six strong magnets hold this 360-degree revolving warning light to steel surface of in-plant vehicles. Thus, the Magna-Vac can be placed on any part of the vehicle. It is available for either 6 or 12-v operation. Made by **Trippe Mfg. Co.**, Dept. MAG-10, 133 N. Jefferson St., Chicago 6, Ill.

▲ For more details circle **NED-244 L9** on enclosed inquiry slip ▲

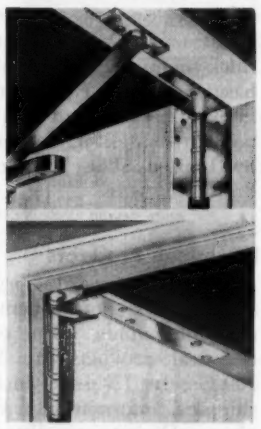
UTILITY PUMP operates on air or gas pressure



Lightweight Series 9000 utility pump which operates on 5 psi or more of air or gas pressure handles slurries and heavy abrasive fluids. It develops discharge pressure of 60 psi and has maximum volume of 70 bph. Pump can also be used for recycling, transferring, and other services. Powering pressure enters through single chamber connecting two diaphragms. Reversing valve switches pressure from one diaphragm to the other, providing continuous suction and discharge. Input to output ratio is about 1 to 1. Diaphragms are available in plastic, Hycar, neoprene, or other materials. Made by **Texsteam Corp.**, 320 Hughes St., Houston 11, Tex.

▲ For more details circle **NED-245 L9** on enclosed inquiry slip ▲

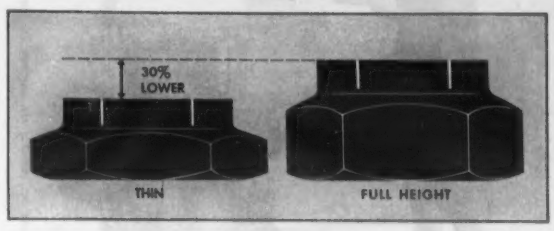
PIVOT REINFORCED HINGE reinforces door and frame



Pivot and a ball bearing butt hinge are combined in one compact interlocked unit which shares the same pin for perfect alignment. It anchors and reinforces doors and frames exposed to violent or unusual forces. Once assembled, the pivot leaves cannot shift in any direction unless the hinge barrel and leaves move in the same direction. The door is taken off by removing the pin. Door plates are available for either square or bevel doors, and hinge sets are offered in bronze or steel. Made by **Stanley Works**, Stanley Hardware Div., 195 Lake St., New Britain, Conn.

▲ For more details circle **NED-246 L9** on enclosed inquiry slip ▲

FLEXLOC thin nuts save weight, space, production time



FLEXLOC self-locking thin nuts are 30% lower—and correspondingly lighter—than full-height locknuts. They lock with shorter bolts; fit in spaces where ordinary locknuts will not go; help you design more compact bolted joints. They speed production, because fewer turns are needed to seat them.

Despite their reduced height, FLEXLOC thin nuts provide high locking reliability. This is because in a FLEXLOC every thread, including those in the locking section, carries a full share of the tensile load. And because FLEXLOCS require no auxiliary locking devices, they facilitate design and specification, simplify inventory, save steps in assembly. They also save on maintenance, because they can be reused repeatedly. See your SPS distributor or write direct for new Bulletin 866.

INDUSTRIAL FASTENER Division **SPS**
JENKINTOWN 24, PENNSYLVANIA

▲ For more details circle **NED-248 L9** on enclosed inquiry slip ▲

AMERICAN "Chainless"

PAN OR PALLET CONVEYOR

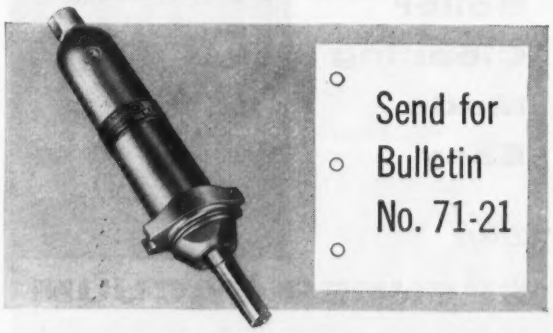
One continuous system — operating at floor, table or ceiling levels — up, down, around curves

One American "Chainless" Conveyor, with a single drive unit, can do work which otherwise requires a complicated system of powered belt or roller conveyors with a number of drive motors and transfer points. The continuous "Chainless" conveyor negotiates horizontal or vertical curves, and can be extended to almost any length. Pallet attachments can be used in place of pans. Eight-wheeled trolleys have exceptional stability. Write for Catalog CD-B.

CONVEYOR DIVISION
THE AMERICAN MONORAIL CO.
Fourth & Franklin Streets • Tipp City 7, Ohio

▲ For more details circle **NED-249 L9** on enclosed inquiry slip ▲

New rotary air motor packs 1/8 h.p. in 1 1/8" dia.



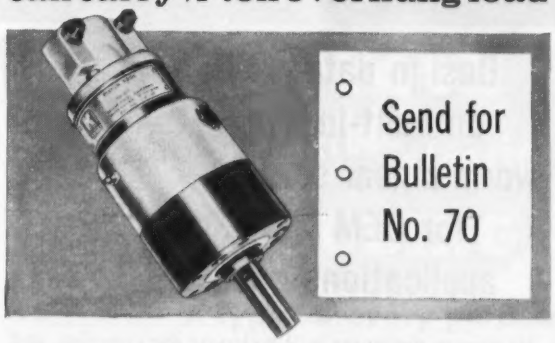
New, compact fractional h.p. motor developed by Gardner-Denver engineers for close quarters and portable applications. Weighs less than a pound. Stall torque up to 36 in.-lb. Measures 7 1/8" long x 1 3/4" at the mounting lugs. Three basic speeds of 20,000, 5000 and 1000 r.p.m. Variable speed-torque control. Plus the basic air motor advantages: positive, instantaneous control . . . continuous operation . . . no spark hazard . . . can't burn out.

EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

GARDNER - DENVER

▲ For more details circle **NED-243 L9** on enclosed inquiry slip ▲

This axial-piston air motor can carry 1/2-ton overhung load



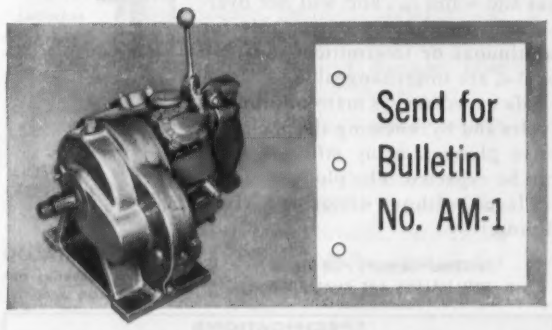
Stout spindle, tough bearings and rugged case give this air motor the ability to carry an overhung load as great as 1000 lb., with no external spindle support. Gardner-Denver axial-piston design packs 2.7 h.p. in 6 3/16" dia. x 13 3/4". Weighs 38 lb. Speeds to 2600 r.p.m. Starting torque to 82 ft.-lb. Variable speed. Reversible. Nonsparking. Works in heat, moisture or dust. Other sizes from 0.6 to 2.7 h.p.

EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

GARDNER - DENVER

▲ For more details circle **NED-247 L9** on enclosed inquiry slip ▲

Here's the radial air motor for your "work horse" jobs



Strong tugging action of this powerful air motor starts heavy loads easily . . . accelerates smoothly. Gardner-Denver 5-cylinder radial design means that at least two cylinders are always on power stroke. Smooth, vibrationless power is not dependent on high r.p.m. Six sizes from 2 to 16 h.p. Direct drive or built-in gear reduction. Reversible and non-reversible models.

EQUIPMENT TODAY FOR THE CHALLENGE OF TOMORROW
Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner-Denver Company (Canada), Ltd., 14 Curity Avenue, Toronto 16, Ontario

GARDNER - DENVER

▲ For more details circle **NED-250 L9** on enclosed inquiry slip ▲

When figuring costs of bending pipe, tube or structural metal parts, you'll come up with a winning figure every time by using PEDRICK PRODUCTION BENDERS.

Let us give you a dollar and "sense" answer to *your* bending problems.
Write PEDRICK TOOL AND MACHINE COMPANY, 3640 N. Lawrence St., Phila. 40, Pa., Dept. 6

PEDRICK PRODUCTION BENDERS

Free "Pedrick Line" Bulletin. Write today.

▲ For more details circle NED-251 L9 on enclosed inquiry slip ▲

NEW SOLENOID VALVES *by Airmatic*

These corrosion-proof valves have only one internal moving part and a completely protected solenoid coil. The coil is fully sealed from air, oil, gas and water . . . and will not overheat on continuous duty. Coils for continuous or intermittent duty, a-c or d-c, are interchangeable.

Life expectancy is many millions of cycles and by renewing the one-piece valve plunger, many millions more can be expected. The plunger can be replaced without disturbing rigid piping.

OPTIONAL DESIGNS

MANUAL OVER-RIDE

MANIFOLD MOUNTING

DISTRIBUTORSHIPS FOR THESE NEW VALVES ARE AVAILABLE

ASK FOR CATALOG
All valve deliveries are made from stock.

SPECIFICATIONS		
	TWO-WAY	THREE-WAY
CATALOG NO.	91011	91011
PRESSURE RANGE	1/16" ORIFICE: 0-500 PSI 3/16" ORIFICE: 0- 70 PSI	1/8" ORIFICE: 0-300 PSI 3/16" ORIFICE: 0-100 PSI
ORIFICES	1/16" THROUGH 3/16"	1/8" AND 3/16"
VOLTAGE	MOST A-C AND D-C	MOST A-C AND D-C
DUTY	CONTINUOUS	CONTINUOUS
POWER CONSUMPTION	10 - 20 WATTS	10 - 20 WATTS
HEAT RISE	WITHIN UL LIMITS	WITHIN UL LIMITS

AIRMATIC VALVE, Inc.
7313 Associate Avenue • Cleveland 9, Ohio

EVERYTHING UNDER CONTROL
Phone: WOodbine 1-5320 • WESTERN UNION: Airmatic Valve, Inc., FAX, Cleveland, Ohio

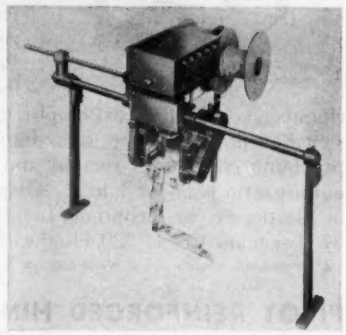
▲ For more details circle NED-252 L9 on enclosed inquiry slip ▲

POTENTIOMETER RECORDER
two pens traverse 5-in. chart width

Interchangeable plug - in input chassis on each of the two channels of the G - 22 potentiometer recorder permits various recording characteristics to be used. Both pens of the compact strip chart recorder traverse the full width of the 5-in. chart. Range is adjustable from 0-9 mv to 0-100 mv. Zero can be set anywhere across the chart. Two speeds are standard, four speeds are optional. Chart speed options range from 1/8 in. per hour to 8 in. per minute. Full span balancing time is 1 sec. Portable and panel mount versions of the 35-lb recorder are offered. Accessories include alarm contacts, retransmitting potentiometers, and event markers on either or both chart margins. Made by **Varian Associates**, Instrument Div., 611 Hansen Way, Palo Alto, Calif.

▲ For more details circle NED-253 L9 on enclosed inquiry slip ▲

ADHESIVE APPLICATOR
for hot melt, cord-like adhesive



Continuous bonding of moving materials can be carried out with the Model BN applicator which dispenses Thermogrip hot melt adhesive. Machine is also suited for use where heavy textured materials require a generous, but controlled adhesive application. Cord-like adhesive is fed from two reels and applied at up to 1/2 lb per minute. This is equal to 1300 linear fpm of a 1/4-in. wide, 3 1/2-mil thick seam. Drive for the applicator is taken from the base machine. Nozzles can be designed to apply adhesives to such hard-to-stick materials as metallic foils, polyethylene film, coatings, and laminations. Made by **United Shoe Machinery Corp.**, 140 Federal St., Boston 7, Mass.

▲ For more details circle NED-254 L9 on enclosed inquiry slip ▲

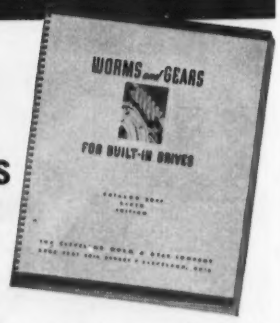
Chemical Products

Hooker Chemical Corp.—Alkalies including caustic soda, caustic potash, and carbonate of potash, chlorine compounds, sulfur compounds, and various other chemical products are briefly described in Bulletin 100-C. Its 12 pages include physical data, uses, and shipping information. Products made by the Phosphorus Division are listed separately in a 2-page supplement.

▲ For more details circle NED-255 L9 on enclosed inquiry slip ▲

Now Available!

Design data on built-in worm & gear sets for OEM applications



Machinery designers will welcome the complete and detailed engineering data contained in Catalog 201F covering Cleveland Worm and Gear Sets for built-in applications.

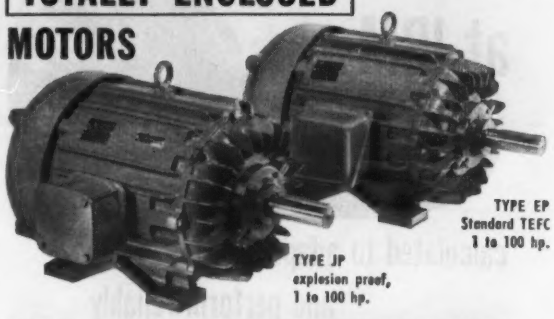
Standardized Cleveland components can be furnished in any design to meet your specialized requirements. Also, Cleveland maintains a continuing inventory of worm gear files from which tools can very often be selected to handle particular job requirements.

Write for your free copy today, and see how customized Cleveland Worm and Gear Sets can help you produce a better, more economical product.

THE CLEVELAND WORM & GEAR COMPANY
3283 East 80th Street, Cleveland 4, Ohio
A subsidiary of the Eaton Manufacturing Company

▲ For more details circle NED-256 L9 on enclosed inquiry slip ▲

WAGNER TOTALLY ENCLOSED MOTORS



GIVE YOU EXTRA PROTECTION

Wagner Type EP Motors offer protection against corrosion, dust, abrasives, fumes, steel chips or filings. Type JP is explosion proof as well.

Motors are built in new NEMA Frame sizes from 182 through 445U, with ribs that add mechanical strength and increase surface cooling area.

Contact the nearest Wagner Branch Office or write for Bulletin MU-224.

WM59-7A
Wagner Electric Corporation
SERVING INDUSTRY SINCE 1891
6435 PLYMOUTH AVENUE
ST. LOUIS 14, MO.
MOTORS • BEARINGS • STANDARD ROTORS
BRUSHES • CAPACITORS • COMMUTATORS

▲ For more details circle NED-257 L9 on enclosed inquiry slip ▲

One slip can cost more than USS Multigrip

Your workers stand—and often fall—in slippery places. Falls account for about 1 in every 5 industrial injuries.

You can eliminate many slips and falls by installing USS Multigrip Floor Plate around machines, on loading platforms, stair treads and main shop aisles.

Multigrip means safe footing wherever it's used. Hundreds of little cleats give safe traction in any direction. Water drains off quickly. Oil and grease can be easily removed with the usual cleaning compounds.

Saves money, too! Where floors take a heavy pounding from traffic, Multigrip will stand up for years under constant use. It won't splinter or crack and can be installed in extra wide plates. There's little or no maintenance.

For more information about USS Multigrip Floor Plate, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pa. *USS is a registered trademark*

Sold by leading distributors from coast to coast.

USS United States Steel

▲ For more details circle NED-258 L9 on enclosed inquiry slip ▲

Boiler Cleaning Made Easy

with

SPENCER VACUUM

It's *quick, clean, effective.* No time-consuming, back-breaking brushing. High velocity *air* does the work.

A Spencer vacuum cleaning system offers many advantages:

- Boilers can be cleaned HOT.
- Tubes easily cleaned even in *cramped quarters.*
- Scale formation is reduced.
- Fuel savings are substantial.
- Requires an average of only 30 minutes.
- Bases of stacks and breechings can also be cleaned.
- System can be utilized for general plant maintenance.

Request Bulletin No. 137A.

The SPENCER TURBINE COMPANY
HARTFORD 6, CONNECTICUT

▲ For more details circle NED-259 L9 on enclosed inquiry slip ▲

NEW Infra - Red Unit Heats People

The Overhead gas-fired PANELBLOC heats people and objects —not the surrounding air. Sun-like warmth available at the flick of a switch. No fans, no motors, no electrical connections needed. No moving parts mean maintenance free long life. Low in first cost, a miser on fuel, PANELBLOC furnishes the complete answer to Commercial and Industrial Heating Problems. *For literature and information — clip this ad to your letterhead and mail today.* E

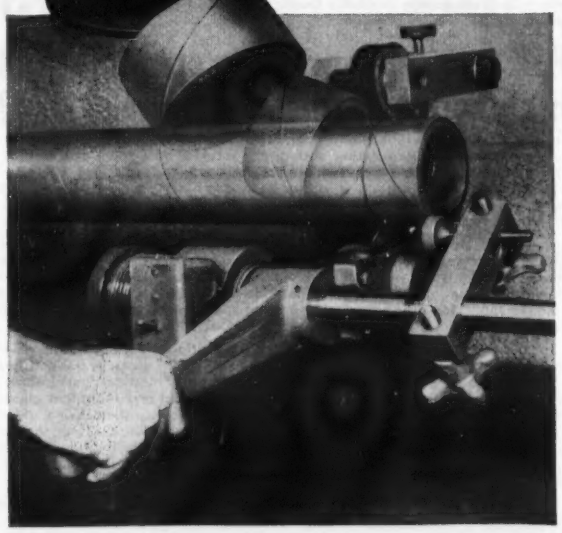
PANELBLOC DIVISION
The Bettcher Mfg. Corp.
3106 West 61 St., Cleveland, Ohio

▲ For more details circle NED-260 L9 on enclosed inquiry slip ▲

AT LAST—A PRACTICAL NEW CORE CUTTER

CAMERON MODEL TC-1M

CLEAN-CUT EDGES
UNIFORM, PREDETERMINED LENGTHS
EASY RIGHT-HAND, DOWN-PRESSURE CONTROL
FULL VIEW OF THE CUT PREVENTS SCORING OF MANDREL, ADDS LIFE TO CUTTER WHEEL



Designed by Cameron Specialists for uniformly accurate, clean-cut paper cores. Cuts to center of 104" core, with cut lengths up to a maximum of 52". Handles tubes from 2½" to 6" inside diameter. Compact design requires little space on bench; frame available for floor mounting. Request information on equipment for larger core sizes. Write for free literature. AA-369

CAMERON

Cameron Machine Company, Franklin Road, Dover, N. J.
Canada: Cameron Machine Co. of Canada, Ltd., 15 Hatt St., Dundas, Ontario
France: Batignolles-Chatillon, 5 Rue De Monttessuy, Paris (7e) France

▲ For more details circle NED-261 L9 on enclosed inquiry slip ▲

SAFETY GLASSES
bridge fits 95 per cent of faces

Bridge design of Mono-Spec safety glasses fits 95 per cent of all faces. Nose pads and rounded universal bridge form a broad continuous bearing surface. Thus, correctly fitted glasses can be supplied new employees on short notice from a very small inventory. Having flesh-colored plastic frames, they are offered in two lens sizes in the F-7 shape and with choice of plastic-cable or metal spatula temples. Made by **Ray-O-Vac Co.**, Willson Products Div., 567 Thorn St., Reading, Pa.

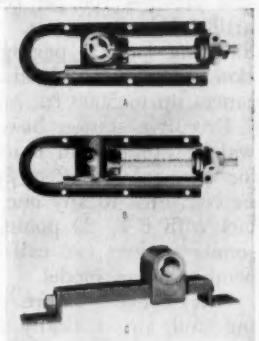
▲ For more details circle NED-262 L9 on enclosed inquiry slip ▲

STATIC METER
measures charges on plastics, paper

Electrostatic charges on plastics, paper, hydrocarbons, and other poor conductors are accurately measured by the Model 250 electrometer voltmeter. Full scale ranges are 10 and 30 kv when detecting head is within ⅜ in. of charged surface. Up to 100 kv can be measured with head at a distance of 6 in. Unit is accurate to within 5 per cent, operates on portable batteries, indicates both positive and negative voltages, and is offered with a convenient carrying case. Made by **Keithley Instruments, Inc.**, 12415 Euclid Ave., Cleveland 6, Ohio.

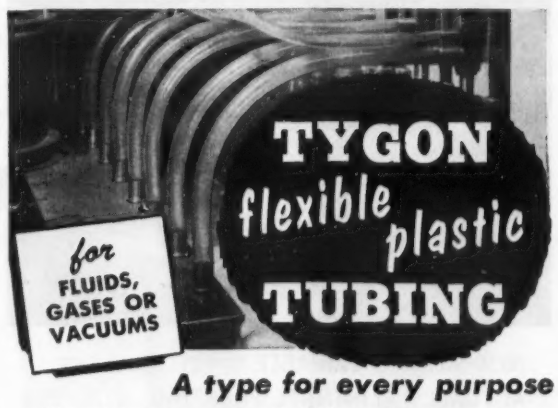
▲ For more details circle NED-263 L9 on enclosed inquiry slip ▲

BEARING TAKEUPS
for use on conveyors, elevators



Added to line of babbitted and bronze bushed bearing takeups are three new series comprising 74 sizes. Series AS 2600Z (A) for conveyors or elevators where service is moderate can be mounted vertically or horizontally on sides of casing or on supports. Bearing blocks are perpendicular to frame base. Series BS 2700Z (B) with bearing blocks parallel to base of frame are for moderate duty conveyors and elevators, and are mounted on structural supports. Series N 3000Z (C) for moderate duty chain or belt conveyors has welded channel frame and allows maximum adjustment within limited installation space. Made by **Link-Belt Co.**, Prudential Plaza, Chicago 1, Ill.

▲ For more details circle NED-264 L9 on enclosed inquiry slip ▲



A type for every purpose

Glass-clear transparency, flexibility and resistance to corrosion make Tygon Tubing the ideal piping medium for a wide range of applications . . . handling fluids, semi-solids, gases, vacuums or pressures.

Where pressure is a factor, outer braid reinforced Tygon Tubing will handle up to 300 psi. Heavy walled Tygon will handle full vacuums.

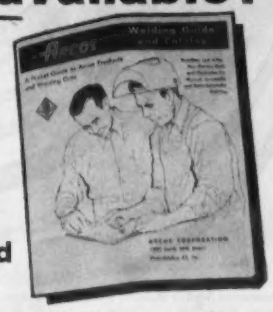
Tygon Tubing is resistant to acids, alkalies, oils, water and alcohol. It is non-toxic, non-contaminating, will handle foods, drugs and other high purity products. Standard sizes range from 1/16" i.d. to 3" i.d.

WRITE TODAY FOR BULLETIN T-97

Tygon is a registered Trade-Mark of
U. S. STONEWARE
204E-1 AKRON 9, OHIO

▲ For more details circle NED-265 L9 on enclosed inquiry slip ▲

now available!



new pocket guide and catalog for better welding results

Nothing like it! Pocket size. Complete data on selection of rods and electrodes for welding stainless, low alloy, non-ferrous and light metals. Gives facts on applications, currents, preheating, annealing, AWS/ASTM classifications. Special sections on How to Get Better Stainless Welds, and Effect of Alloying Elements on Weld Metal. Comprehensive list of valuable technical data available. FOR FREE COPY write ARCOS CORPORATION, 1500 South 50th Street, Philadelphia 43, Pa.

ARCOS | Filler Metal Specialists

▲ For more details circle NED-266 L9 on enclosed inquiry slip ▲

GENERAL
WIDE-BASE PNEUMATICS

Tops For Dependable, Low-Cost Performance!

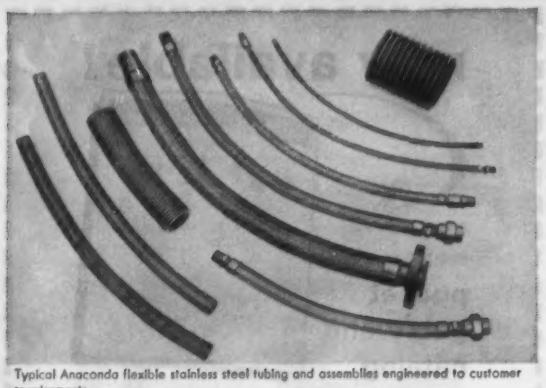
Designed to save you time, money and labor, long-wearing General Wide-Base Pneumatics are your best bet for lower operating costs. Featuring high-flotation for easier rolling, they cushion loads and equipment against damage, save high cost floors and floor surfaces. Complete line gives you the exact design for every purpose.

Available separately or in assemblies of tires, tubes and wheels. Size O. D. 8" to 35"—200 to 7890 lbs. capacity for low or high speeds.

CASTER FORKS
Engineered to carry heavier loads without adding dead weight to equipment, these wide-base caster forks come in identical pairs in a wide range of sizes.

SEND FOR CATALOG, DEPT. 4
THE GENERAL TIRE & RUBBER CO. • AKRON, OHIO

▲ For more details circle NED-267 L9 on enclosed inquiry slip ▲



Typical Anaconda flexible stainless steel tubing and assemblies engineered to customer requirements.

Flexible tubing that resists corrosion

Flexible stainless steel tubing made by Anaconda Metal Hose is an ideal, economical flexible connector wherever you have to convey searching or corrosive liquids or gases under either high or low temperature and pressure conditions. This flexible tubing stands up under continuous flexing . . . absorbs severe vibration . . . compensates for misalignment . . . is easily installed.

FREE CATALOG: Gives engineering data on construction and types. Includes pressure ranges, data on fittings. Write to: Anaconda Metal Hose Division, The American Brass Company, Waterbury 20, Conn. 59184

WHEREVER CONNECTORS MUST MOVE **ANACONDA®** METAL HOSE

▲ For more details circle NED-268 L9 on enclosed inquiry slip ▲

With ONE Micro-Set Torque Tool!

Apco Mossberg's improved Micro-Set Torque Tool does both . . . torques left *and* right. Simple to set and stays set at 5 to 150 inch-pounds of torque. Releases Automatically at desired tension . . . and resets itself.

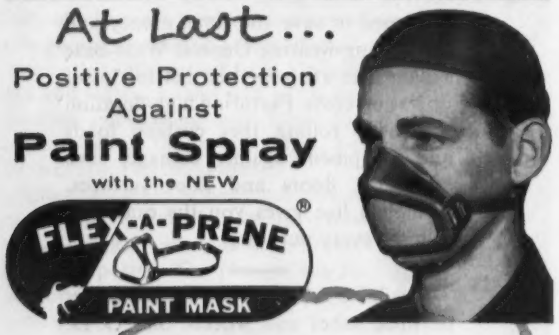
Compact and Versatile, Micro-Set is ideal for rapid precision assembly of electrical and industrial equipment, instrumentation — all close quarter tightening.

Several Sizes Available: 5 to 150 inch-pounds, 100 to 750 inch-pounds, 700 to 1600 inch-pounds, and a preset Midget type wrench for torquing in inch-ounces. Write today!

APCO MOSSBERG COMPANY
161 Lamb Street, Attleboro, Mass.

▲ For more details circle NED-269 L9 on enclosed inquiry slip ▲

At Last...
Positive Protection Against
Paint Spray
with the NEW



FLEX-A-PRENE® PAINT MASK

New Efficiency
The sensational new FLEX-A-PRENE Paint Mask keeps out paint pigments and solvents with amazing efficiency, yet it's light (just 1 ounce), comfortable and so easy to talk and breathe through you hardly know you're wearing it.

New Economy
Flex-A-Prene's low first cost is only part of the story. Most important savings come from its endurance in service and time saved through less frequent filter replacements. You can expect at least 100 hours of exposure before filter replacement is necessary.

Sample: $1.50 postpaid (INDUSTRIAL PRICE ONLY)

FLEXO Products, Inc.
Westlake, Ohio

▲ For more details circle NED-270 L9 on enclosed inquiry slip ▲

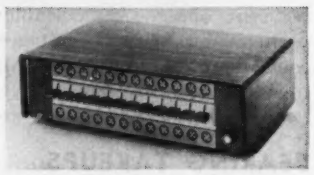
COMBINATION ATTACHMENT enables fork truck to handle hook or pallet loads up to 2000 lb

Added to line of front end units now available for Hi-Lifter fork trucks is a combination lift arm and hook, lift arm and pallet fork, and vertical clamp arms. Attachment is hydraulically controlled. Vertical clamp arms consist of two welded plate arms to hold lumber and other materials securely on the fork. It will stack and take down bundled, baled, and rolled material.

Lift arm and hook lifts 2000-lb loads at 10-ft forward reach to height of 35 ft. It is a pick and carry attachment for steel, motor blocks, and crated material. With the lift arm and pallet fork, it is possible to lift 2000-lb load on pallet to 35 ft. Made by **Kwik-Mix Co.,** 235 W. Grand Ave., Port Washington, Wis.

▲ For more details circle NED-271 L9 on enclosed inquiry slip ▲

INTERCOMMUNICATION SYSTEM insures complete privacy and faithfully reproduces voices

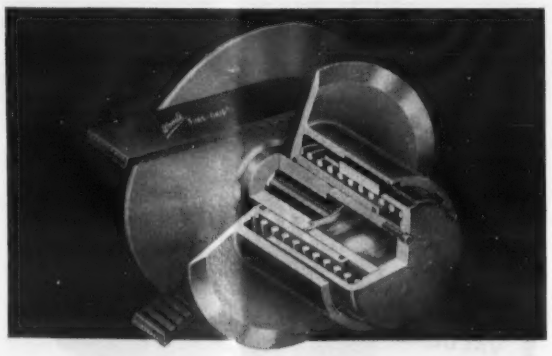


Transistorized intercommunication system replaces three separate systems currently produced by company. System comprises executive (shown), master, and personnel stations; is completely independent; and provides 100 per cent trunkage which eliminates artificial busy signals. It can be linked to central dictating facility, paging system, and music distribution center, and individual stations can operate at distances up to 5000 ft.

Executive station has right-of-way priority, and its walnut cabinet can house three different size stations for contact with 12 to 24 people. Master station can be converted to any one of five stations, allowing contact with 6 to 23 points and more, as needed. Personnel stations can call one, two, or three points, depending upon model.

"Magic eye" feature visually indicates who is calling and automatically leaves a message. Incoming calls to executive are also announced by red lamps. System allows no one to break in on a call and reproduce voices for easy recognition. Where required, system can be integrated into automatic dial systems. Developed by **Dictograph Products Inc.,** 95-25 149th St., Jamaica, L. I., N. Y.

▲ For more details circle NED-272 L9 on enclosed inquiry slip ▲



NEW WOOD'S VARIABLE SPEED PULLEYS ACTUALLY ELIMINATE FREEZING, STICKING

Wood's new motion control pulleys not only permit accurate, infinite speed adjustment, but completely eliminate fretting corrosion, freezing, sticking. Externally located, resilient keys do not obstruct the flow of oil around bearing surfaces. Positive, rotational pumping action re-oils these surfaces with each rotation of the pulley. No downtime. No periodic running through the speed range. Require oil check only twice a year in normal operation. *WRITE FOR BULLETIN 4101.*

T. B. WOOD'S SONS COMPANY
CHAMBERSBURG, PENNSYLVANIA
ATLANTA • CAMBRIDGE • CHICAGO • CLEVELAND • DALLAS

▲ For more details circle NED-273 L9 on enclosed inquiry slip ▲

ladders for industry

• ALL-ALUMINUM
• ALL-STEEL
• FIBERGLASS

Choose from a complete line of Alco-Lite Ladders made specifically for industrial use. Easy handling aluminum step, warehouse, straight, extension, and specialty ladders. Mobile, 1 to 12 step all-steel ladder-stands. Non-conducting, non-absorbent fiberglass straight and extension ladders. Illustrated literature on request.

ALCO-LITE

Aluminum Ladder Co.
Dept. L7 W. Darlington St. Ext., Florence, South Carolina

▲ For more details circle NED-274 L9 on enclosed inquiry slip ▲

NEW GIANT narda SONBLASTER

Generator G-5001
500 watts output

Transducerized Tank NT-5001
Capacity: 10 gallons
Dimensions: 20" L x 11½" W x 10" D

Generator features tank selector and load selector switches on front panel to operate one or two NT-5001 tanks alternately. Other combinations of tanks and submersible transducers available from stock; larger tanks available on special order. **$1325**

For mass-production cleaning and high capacity chemical processing!

Here's a new Narda SonBlaster ultrasonic cleaner with tremendous cavitation activity and generating capacity! Featuring full 500 watts output, this SonBlaster is available with a fully transducerized giant 10-gallon capacity tank. In addition, it will operate from six to 10 Model NT-605 high energy submersible transducers, at any one time, in any arrangement in any shape tank you need up to 70-gallon volume.

Install this new Narda SonBlaster, and immediately you'll start chalking up savings over costly solvent, vapor or alkaline degreasing methods! You'll save on chemicals and solvents, cut maintenance and downtime, eliminate expensive installations, save on floor space, and release labor for other work. But perhaps most important, you'll clean faster, cut rejects, and eliminate bottlenecks.

Whether you're interested in mass-production cleaning or degreasing of mechanical, electronic, optical, or horological parts or assemblies ...rapid, quantity cleaning of "hot-lab" apparatus, medical instruments, ceramic materials, electrical components or optical and technical glassware...or in speeding up metal finishing and chemical processing of all types—you'll find this new SonBlaster will do your work faster, better and cheaper. Write for more details now, and we'll include a free questionnaire to help determine the precise model you need. Address: Dept. NED-20.

Consult with Narda for all your ultrasonic requirements. The SonBlaster catalog line of ultrasonic cleaning equipment ranges from 35 watts to 2.5 KW, and includes transducerized tanks as well as immersible transducers which can be adapted to any size or shape tank you may now be using. If ultrasonics can be applied to help improve your process, Narda will recommend the finest, most dependable equipment available for immediate delivery from stock—and at the lowest price in the industry ($175 up)!

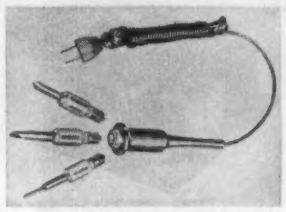
For custom-designed cleaning systems, write to our Industrial Process Division; for information on Chemical processing applications, write to our Chemical and Physical Process Divisions; both at the address below.

the narda ultrasonics corporation
625 MAIN STREET, WESTBURY, L. I., N. Y.
Subsidiary of The Narda Microwave Corporation

▲ For more details circle NED-275 L9 on enclosed inquiry slip ▲

▲ For more details circle NED-276 L9 on enclosed inquiry slip ▲

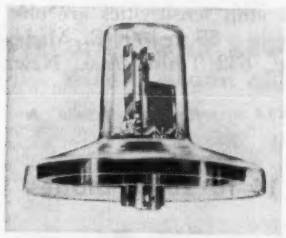
SOLDERING PENCIL
nylon handle takes screw type tips



Molded of heat resistant nylon, the Sidco pencil soldering handle is non-breakable and has an internal spring to keep tips tight at all times. It accepts all screw type soldering tips rated up to 500 w. By dissipating heat through cooling vents, terminal burn-out is prevented. Made by **Sid Ungar, Inc.**, 1729 W. Washington Blvd., Venice, Calif.

▲ For more details circle NED-279 L9 on enclosed inquiry slip ▲

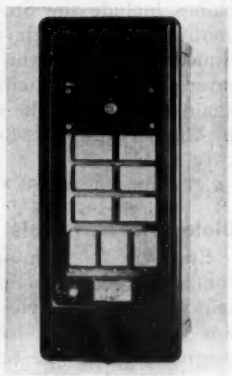
PHOTOELECTRIC CONTROLS
supplied in weatherproof housing



Sponge rubber gasket on the base of these two-component photoelectric lighting controls cushions the connection and provides protection against dust, dirt, and moisture. The 120-v Model D-2-375 and 240-v Model D-4-375 have a delayed circuit response and are fail-safe in operation. Contact position of the single-pole single-throw integrating relay is normally closed at night. It opens when natural light on the wide-area photoconductive cell exceeds level set on the relay. The 120-v model has an incandescent load rating of 1800 w, mercury rating of 1000 w, and in-rush current rating of 120 amp. These ratings for the 240-v model are 1500 w, 1000 w, and 60 amp, respectively. Both have a standard polarized twist lock base. Made by **Precision Magnetic Controls, Inc.**, Ridgewood, N. J.

▲ For more details circle NED-280 L9 on enclosed inquiry slip ▲

DIFFERENTIAL RELAY
is all-static circuit protector



High-speed, all-static Type SA differential relay provides circuit protection from damage due to three-phase, phase-to-phase, two-phase-to-ground, and phase-to-ground faults. Minimum operating current is 0.14 amp. Relay is merely connected to conventional current transformers. At 5 amp, 60 cycles, the burden on each transformer in the generator leads is 0.25 va. Unit is housed in compact Flexitest case and many of its components are encapsulated. Made by **Westinghouse Electric Corp.**, Box 2099, Pittsburgh 30, Pa.

▲ For more details circle NED-281 L9 on enclosed inquiry slip ▲

▲ For more details circle NED-277 L9 on enclosed inquiry slip ▲

YOUR BEST MOVE IS TO MOVE WITH
MERRILL
MATERIAL HANDLING DEVICES

For Interesting Information write
MERRILL BROTHERS
56-13 Arnold Ave., Maspeth, N. Y.
3-R-5
▲ For more details circle NED-282 L9 on enclosed inquiry slip ▲

BAUSCH & LOMB
DR-25
OPTICAL GAGE

- DIRECT SCALE READING TO .0001"
- 0" TO 3" RANGE WITHOUT GAGE BLOCKS

"The new Bausch & Lomb DR-25 Optical Gage has let us cut total inspection and measurement time on our Teledyne Electrical Transmitters —high-precision gages to register and relay pressure data for telemetric readings—by at least 75%. We find that we no longer need gage blocks and special gages to meet our very rigid specifications."

Joseph F. Less, Plant Manager
Taber Instrument Corporation
North Tonawanda, N. Y.

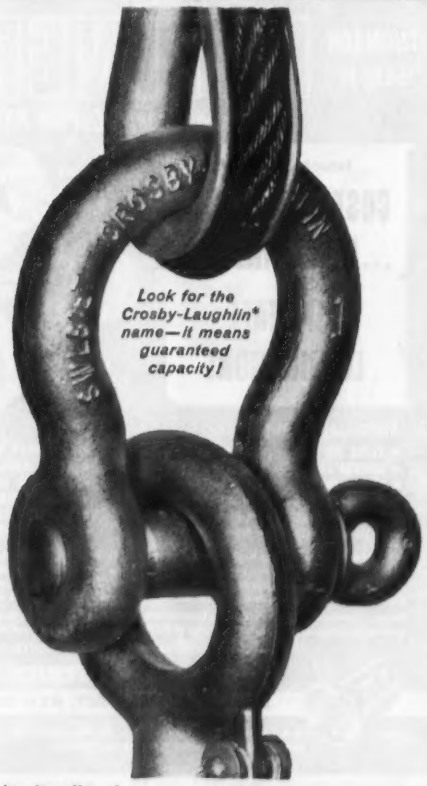
BAUSCH & LOMB

Distributed in U.S.A. through DoALL Co.
WRITE for Catalog D-285 Demonstration on request
Bausch & Lomb Optical Co., 72747 Bausch Street, Rochester 2, New York
▲ For more details circle NED-283 L9 on enclosed inquiry slip ▲

More capacity... size for size!

Crosby-Laughlin Load-Rated® Shackles

Designed to new safety standards



- **Guaranteed capacity**
- **50% stronger than ordinary shackles**
- **Safe working load forged in every shackle**

Stocked and sold by leading mill supply, construction and industrial equipment distributors.

Write for FREE specifications catalog listing the most complete line of drop forged fittings for wire rope and chain.
*Trademark

CROSBY-LAUGHLIN *Division*
AMERICAN HOIST & DERRICK COMPANY
FT. WAYNE, INDIANA

Manufacturers of Crosby Clips and "Load-Rated" Blocks . . . Crosby-Laughlin "Load-Rated" Fittings . . . Lebus Load Binders and Snatchblocks.
▲ For more details circle NED-278 L9 on enclosed inquiry slip ▲

Clean Surfaces Quickly

Use Pangborn Air Blast Cleaning Machines for fast, economical maintenance of bridges, tanks, buildings, hulls, structural metal, sheets and plates.

Removes scale, rust, paint, dirt; leaves *toothed* surface ready for painting. Portable, stationary, dry and wet types.

Write PANGBORN CORP., 2400 Pangborn Blvd., Hagerstown, Md.

Manufacturers of Blast Cleaning and Dust Control Equipment and Rotoblast® Steel Shot and Grit.

Pangborn
BLAST CLEANS CHEAPER

▲ For more details circle NED-284 L9 on enclosed inquiry slip ▲

2 SPEEDS **SIMPLEST HOOK-UP!**
VERSATILITY UNLIMITED!

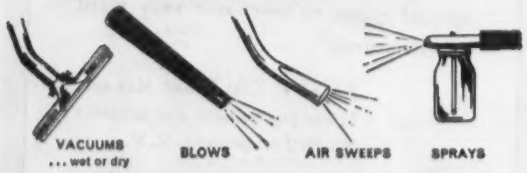
CLEMENTS
Cadillac QUIK-VAC® MODEL 14

Makes quick work of any cleaning job—floor to ceiling. Picks up filings, chips, dirt, litter, *liquids!* Quickly converts for blowing operation.

2-SPEED MOTOR *Exclusive* . . . high speed for the tough jobs . . . reduced speed for cleaning delicate wiring or equipment!

3-in-1 HOSE COUPLER* *Exclusive* . . . Only one hose with coupler needed to connect to air outlet and two air intakes.
**Patent applied for.*

FULL LINE OF OPTIONAL EQUIPMENT for hundreds of cleaning, maintenance and production jobs.



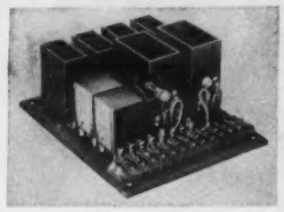
WRITE FOR NEW BULLETIN
OTHER MODELS AVAILABLE FROM 1 TO 55 GALLONS

Industrial Division
CLEMENTS MFG. CO.
6627 S. Narragansett Ave., Chicago 38, Ill.

SINCE 1910 — *Specialists in vacuum cleaning equipment for home, business and industry.*

▲ For more details circle NED-285 L9 on enclosed inquiry slip ▲

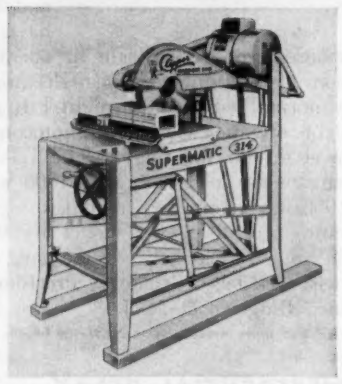
POWER CONTROL UNITS
in 200 to 2500-w power outputs



Substantial reduction in size and weight is afforded by line of Universal power control units which consist of five system types with power outputs from 200 to 2500 w. Equipment provides voltage/current regulation, ac servomotor control, dc motor speed and position control, and temperature and light dimming control. Units combine the magnetic amplifier and solid state thyratron, or a silicon controlled rectifier. Industrial uses cover control systems for processing, packaging, machine tools, and material handling operations. All five types are available for 60 or 400-cps supply systems. Sensitivity is 100 microamperes for full output, although 20 microamp to 1 amp sensitivities are obtainable. Temperature range is −55 to 100° C. Made by **Magnetic Amplifiers, Inc.**, 632 Tinton Ave., New York 55, N. Y.

▲ For more details circle NED-286 L9 on enclosed inquiry slip ▲

MASONRY SAWS
two models use 14 to 20-in. blades



Fast production cutting of all masonry materials with maximum blade life is afforded by two SuperMatic masonry saws—the 14-in. Hi-Speed Model SM-314 and the universal 20 to 14-in. SM-300. Latter features an adjustable blade guard which is preset according to size blade used. Two models are offered to assure efficient rim speeds for 14, 18, and 20-in. blades. Features found on both machines include the Sta-Level cutting head, the Hi-Lo control wheel which makes head angle adjustments unnecessary, conveyor cart, 3-hp G-E motor, collar saver, pressure equalizer springs to cushion blades against shock, and the slim-line bearing housing. Made by **Clipper Mfg. Co.**, Suite 205, 2800 Warwick, Kansas City 8, Mo.

▲ For more details circle NED-287 L9 on enclosed inquiry slip ▲

Dielectric Materials

Emerson & Cuming, Inc.—Condensed listing of company's complete line of dielectric materials is contained in folder-style short-form catalog. Included are casting resins, foams, absorbers, adhesives, impregnants, coatings, ceramics, and reflectors. Center chart lists physical and electrical properties, features, and major uses of various standard resins.

▲ For more details circle NED-288 L9 on enclosed inquiry slip ▲

THOMSON "Snap-In" **NYLINERS**
of smooth, tough DuPont NYLON

Better bearings that
COST less to BUY*
...less to INSTALL
ELIMINATE LUBRICATION!

Additional Benefits:

• CLOSE FIT	• LOW FRICTION	• INSTANTLY REPLACEABLE
• LONGER LIFE	• RESIST POUNDOUT	• RESIST ABRASION
• EASILY INSTALLED	• NO FRICTION OXIDATION	• MINIMUM SPACE
• LESS SERVICING	• DAMP VIBRATION	• SILENT OPERATION
• SELF-RETAINING	• OPERATE IN LIQUIDS	• LIGHTEST WEIGHT
• RESIST CORROSION	• NON-CONTAMINATING	• REDUCED WEAR

NYLINER Bearings are a highly engineered thin liner of DuPont Nylon, designed to bring bearing users the many benefits of Nylon as a bearing material by solving most of the limitations surrounding its use. The compensation gap principle assures maintenance of diametral tolerances for precision applications.

Seven Standard Types available from stock. Write for literature and name of your local representative who stocks NYLINER Bearings for immediate shipment.

*In production quantities at new, REDUCED PRICES.

THOMSON INDUSTRIES, Inc.
DEPT. 9, MANHASSET, NEW YORK

Also— —Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions and 60 CASE . . . Hardened & Ground Steel Shafting

▲ For more details circle NED-289 L9 on enclosed inquiry slip ▲

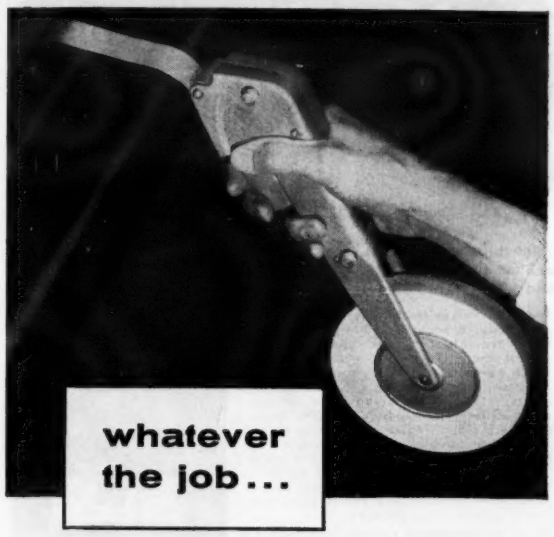
Measure Tension and Compression Loads

with precision, direct reading Hunter Mechanical Force Gages*—Series L type in 13 models for measuring load ranges from 0-500 grams to 0-30 pounds and Series D type in 6 models for measuring load ranges from 0-50 pounds to 0-500 pounds. Both types are accurate to better than 1% of full scale, can be provided with a "hold-at-maximum" indicator for registering maximum load, come complete with six attachments and wood carrying case. Thousands are now in use in laboratories, inspection departments, on production lines, and in the field. Send for Bulletin 750c containing full details including prices.

*The "Force Gage" of many test standards.

HUNTER Springs
HUNTER SPRING COMPANY
A Division of American Machine and Metals, Inc.
14 Spring Avenue, Lansdale, Pennsylvania

▲ For more details circle NED-290 L9 on enclosed inquiry slip ▲



PERMACEL STRAP-IT
TRADEMARK
Pressure Sensitive Tape Dispenser

PERMACEL *New Brunswick, N.J.*
TAPES • ELECTRICAL INSULATING MATERIALS • ADHESIVES

▲ For more details circle NED-291 L9 on enclosed inquiry slip ▲

New, revised bulletin *

Corning's Chemically Resistant Plate and Flat Glasses
(*They're Heat-Resistant, too!)

A new edition of bulletin PE-34, "Corning Flat Glasses," gives you properties, specifications and applications.

This valuable addition to your reference file contains data on four different glasses—PYREX brand No. 7740, VYCOR brand No. 7900, a special coated infrared reflecting type, and heat-resistant blue observation.

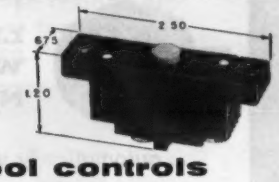
This bulletin shows you where and how to use each kind, how to match type to task, what shapes and sizes are available.

That's Bulletin PE-34. We'll be glad to send you a free copy.

CORNING GLASS WORKS
56 Crystal Street, Corning, New York
CORNING MEANS RESEARCH IN GLASS

▲ For more details circle NED-292 L9 on enclosed inquiry slip ▲

MICRO SWITCH Precision Switches



5 ways better... new, compact "3MN" switch for machine tool controls

- *STACKS IN SMALL SPACE*
  Step design case only .675 in. wide
- *INTEGRAL TERMINALS*
  Staggered terminals permit gang mounting without use of insulating barriers
- *LONG MECHANICAL LIFE*
  Over 10,000,000 operations at full overtravel
- *PLENTY OF OVERTRAVEL*
  .080 in. minimum
- *EASY TO MOUNT*
  One mounting hole elongated

Contact arrangement is single-pole two-circuit double-break. Can also be used as a single-pole double-throw switch. Underwriters' Laboratories listed for: 15 amps, 120, 240, 480 or 600 vac; ½ hp, 120 vac; 1 hp, 240 vac; .8 amp, 115 vdc; .4 amp, 230 vdc. Pilot duty rating: 600 vac, max. *Send for Data Sheet 164.*

MICRO SWITCH . . . FREEPORT, ILLINOIS
A division of Honeywell
In Canada: Honeywell Controls Limited, Toronto 17, Ontario

Honeywell
MICRO SWITCH Precision Switches

For more details circle NED-293 L9 on enclosed inquiry slip

BEVERLY THROATLESS SHEARS

MAKE CUTS LIKE THESE

QUICKLY... EASILY... ACCURATELY

18 ga. metal cut with Model B-I Shear.

Save time, labor and material—use a Beverly to make any cut . . . straight, curved or irregular in any metal. Exclusive design allows work to be turned at any angle while cutting. Standard in the industry for years. 4 models—capacities to ⅛" mild.

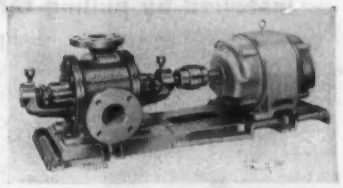
See your Beverly Distributor for a demonstration. Write for FREE illustrated circular on Beverly metal cutting Shears.

MODEL B-3 with ball bearing hold down. Cap. ⅝" mild; 10 gauge stainless.

Beverly SHEAR MFG. CO.
3016 W. 111th STREET • CHICAGO 43, ILLINOIS

For more details circle NED-294 L9 on enclosed inquiry slip

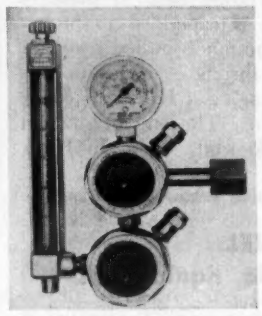
TURBINE PUMPS
capacities up to 150 gpm at 300 psi



Redesigned Apco two - stage turbine-type pumps have revised shell housing which directs fluid from first to second stage impeller in a 180 - degree cross-over. Forces of first and second stages are thus equalized, achieving balanced radial load. Absence of metal-to-metal contact within pump channel permits handling of free-flowing or even nonlubricating liquids almost indefinitely without wear. Turbine type multivane impellers handle vapor and air along with liquid. Capacities range up to 150 gpm at pressures to 300 psi. Made by **New York Air Brake Co.**, Aurora Pump Div., Loucks Street, Aurora, Ill.

For more details circle NED-296 L9 on enclosed inquiry slip

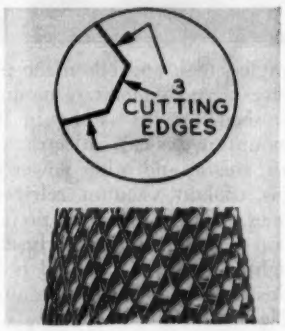
WELDING GAS REGULATOR
offers argon and helium gas savings



Gas saving flow meter regulator for shielded inert gas welding applications combines a two-stage Econflo regulator with separate direct-reading flow meters for argon and helium. Compensated for back pressure, the flow meters are accurate within 2 per cent of the full scale reading. Regulator holds the pressure setting accurately from full cylinder to 50-75 psi inlet pressure. Flow range for the argon meter is to 60 cfh and for the helium meter to 200 cfh. Over-all dimensions are 9 x 6½ x 3½ in. Made by **Smith Welding Equipment Corp.**, 2633 Fourth St. S.E., Minneapolis 14, Minn.

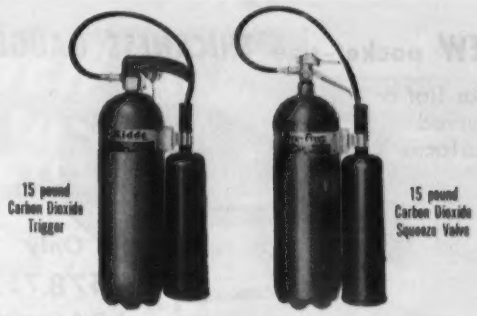
For more details circle NED-297 L9 on enclosed inquiry slip

BURRING TOOL
three-edge cut produces flake chip



Tooth form with three cutting edges is used in the Dia-Mo Cut burs for machining heat - treated alloy, and stainless steels. Shearing action produces a fine flake-type chip. Bur is operated at one-third to one-half the speed of conventional cut burs for best results. About 615 different bur sizes and types are offered in standard, fine, and coarse cuts. Made by **Atrax Co.**, 240 Day St., Newington 11, Conn.

For more details circle NED-298 L9 on enclosed inquiry slip



NEW KIDDE CARBON DIOXIDE PORTABLES AWARDED HIGHEST U. L. RATINGS!

Four new Kidde carbon dioxide extinguishers have been awarded *highest* Underwriters' Laboratories ratings. The portables are available in 15 and 20 lb. capacities with either squeeze valve or trigger operation.

They feature new hose and discharge horn assemblies which are responsible for their extra fire fighting ability. The new assembly is supplied also with Kidde's 10 pound carbon dioxide portable which has a U. L. rating not exceeded by any other extinguisher of its capacity. This hose-horn combination is also being offered as a replacement unit for existing 10, 15 and 20 lb. units, and when attached will upgrade their effectiveness equal to the new ratings. For complete information on these top-rated units, write Kidde today.

Kidde

Walter Kidde & Company, Inc., 1124 Main St., Belleville, N. J.
Industrial and Marine Division

For more details circle NED-299 L9 on enclosed inquiry slip

EASY TO APPLY. PLIOBOND requires no mixing, brushes on, dries rapidly.

EXCELLENT ADHESION. PLIOBOND exhibits exceptional strength—up to 1600 lbs./sq. in. in shear tests.

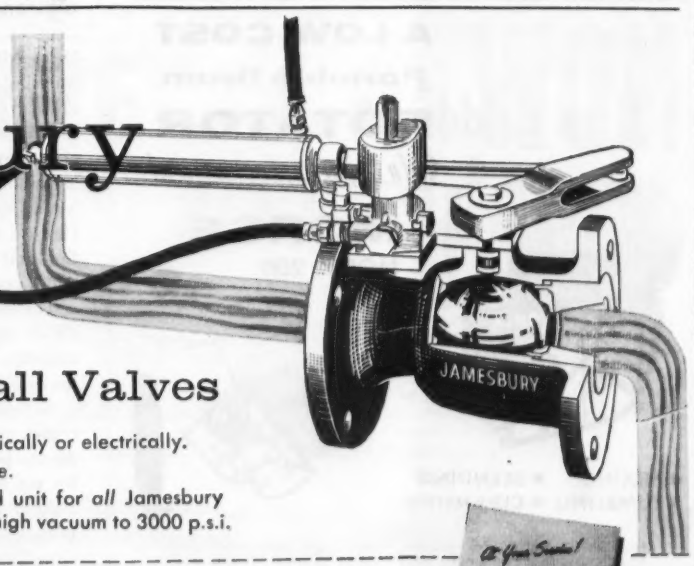
EXTREMELY DURABLE. PLIOBOND resists age, heat, cold, water, chemicals, oils.

Pliobond BY **GOODYEAR**

Pliobond—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

For more details circle NED-300 L9 on enclosed inquiry slip

Double-Duty with **Jamesbury** REMOTE OPERATORS* for "*Double-Seal*" Ball Valves



- Operated hydraulically, pneumatically or electrically.
- "Fail-Safe" constructions available.
- Available as a factory pre-tested unit for *all* Jamesbury "Double-Seal" Ball Valves: from high vacuum to 3000 p.s.i.

*Standard speed for closure: less than ¾ of a second. Faster speeds available on request.

Distributors In Principal Cities. Get The Complete Facts On All Jamesbury Products.

Name ..... Title .....
Company .....
Address .....
City ..... State .....
☐ Jamesbury Literature
☐ Distributor Service

JAMESBURY CORP., 125 NEW STREET, WORCESTER, MASS.

683-8

For more details circle NED-295 L9 on enclosed inquiry slip

NEW pocket-size THICKNESS GAUGE

For flat or curved surfaces

Measures Nonmagnetic Coatings with ± 5% ± .0001" accuracy

ELCOMETER measures thickness of porcelain enamel, paints, platings, foils, glass, paper, plastics, and other nonmagnetic coatings quickly and accurately. Gauges flat or curved surfaces and hard-to-get-at spots easily. Needle locking device assures correct reading every time. Complete with tough leather case, containing inner pocket for test strips, and carrying harness. Weighs only 6 oz.

WRITE FOR ILLUSTRATED FOLDER
FERRO CORPORATION
4151 East 56th Street • Cleveland 5, Ohio

▲ For more details circle NED-301 L9 on enclosed inquiry slip ▲

SAVE UP TO 25% ON ELEVATOR COSTS

Using dependable hydraulic power, Rotary Oildraulic Elevators operate with maximum efficiency. Power is applied directly to the load . . . no lost motion or wasted energy. The elevator car is supported by a powerful hydraulic jack, eliminating the need for heavy load-bearing shaftway and overhead machinery. Capacities to 100,000 lbs. Installed and serviced by a nationwide organization. Write for catalogs.

ROTARY OILDRAULIC® ELEVATORS

Rotary Lift Company
Division of Dover Corporation
1025 KENTUCKY • MEMPHIS 2, TENN.

▲ For more details circle NED-302 L9 on enclosed inquiry slip ▲

4 Ways Better
For Every Sweeping Job!

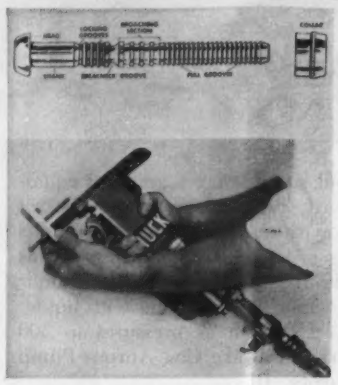
1. *Highest quality materials and construction*
2. *Outlast ordinary brushes 2 to 1*
3. *Tufts cannot come out or come loose*
4. *27 styles and sizes to choose from*

Milwaukee Dustless Brush Co., 530 N. 22nd St., Milwaukee, Wis.

FIRM _____
ADDRESS _____
CITY _____ STATE _____

▲ For more details circle NED-303 L9 on enclosed inquiry slip ▲

INTERFERENCE-FIT FASTENERS
self-broaching, self-sizing types installed by pulling through holes



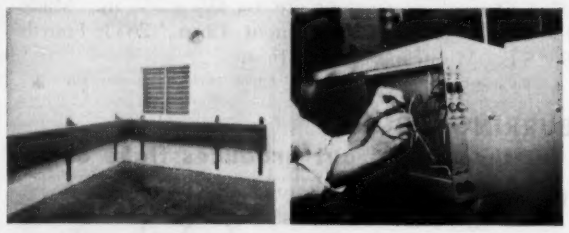
Leakproof joints and structural rigidity in sheet metal fabrication result from the use of self-broaching and self-sizing Huckbolt fasteners. Self-broaching 10LP fastener is offered in 3/16 and 1/4-in. nominal pin diameters, with lengths as required. The fastener pin with integral progressive broach is pulled through the hole by the Huck power installation tool, broaching the drilled hole to a finish size and providing a precise interference fit.

The 9LP self-sizing fastener, available in the same sizes, contains an integral extruding land in place of the broach. The drilled hole is expanded to proper size by the extruding land as the pin is pulled through. After pulling either fastener through, installation is completed by automatically swaging a Huckbolt collar into locking grooves on the pin. The end of the pin with the pulling grooves is broken off. Made by **Huck Mfg. Co.**, 2480 Bellevue Ave., Detroit 7, Mich.

▲ For more details circle NED-304 L9 on enclosed inquiry slip ▲

MULTISERVICE CHANNEL
carries gas, electric, liquid lines

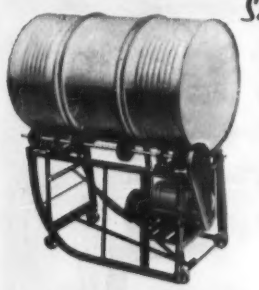
Alden power, facilities, and communication channel is a prefabricated, pre-engineered unit made up in 5-ft long modules which are less than 3 in. wide. Right



angles, tees, and ells make possible any desired layout. Five methods facilitate mounting to floor, wall, ceiling, or bench with standard brackets, stanchions, and mounting devices. Electric, communications, hydraulic, air, steam, and other power lines can be included with gas, coolant, vacuum, refrigerant, air, water, and drain lines. Easily installed, prefabricated switch units contain a switch, indicator fuseholder, and neon indicator light. Standard channel is 2 3/8 x 16 x 60 in. When this channel is filled, two auxiliary channels measuring 2 3/8 x 10 x 60 in. and 2 3/8 x 6 1/2 x 60 in. can be fitted under it. Made by **Alden Systems Co.**, Alden Research Center, 20 Washington St., Westboro, Mass.

▲ For more details circle NED-305 L9 on enclosed inquiry slip ▲

NOW A LOW COST Portable Drum ROTATOR
Safe... Fast... Economical



MORSE
MODEL 200

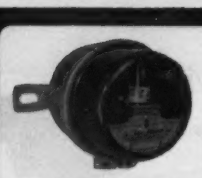
• MIXING • BLENDING
• TUMBLING • CLEANSING

Handles 30 and 55 gal. drums; 1 and 5 gal. containers with special attachment; weight capacities to 500 lbs. Weighs only 135 lbs. Available with 10, 20, or 40 rpm. Exclusive features assure smooth, thorough operation. Neoprene drive wheels are oil and chemical resistant. Retractable casters facilitate loading. Also available with explosion-proof or air-driven motors. Clip this ad to your letterhead for free MORSE Catalog.

Clip this ad to your letterhead for free MORSE Catalog.

MORSE MANUFACTURING CO., INC.
756 West Manlius Street, East Syracuse, N. Y.

▲ For more details circle NED-306 L9 on enclosed inquiry slip ▲



LIGHT WHEN YOU NEED IT
... automatically with F-P controls

Fisher-Pierce photoelectric lighting controls automatically turn on lights in parking lots, railroad yards, docks, loading areas, storage and security areas—whenever daylight drops to preset turn-on setting—regardless of weather or time of day. Turn-on setting is adjustable, never needs re-setting; various models available with turn-on from 1 to 500 f.c. Easy to install, housed in weatherproof watt-hour meter case. Reliability and ruggedness proven by ten years of use.
Standard Model 63300C switches lamp loads up to 3000 watts, special model switches 6000 watts; SPST, SPDT or DPST power contactors. For 105-130 or 210-250V, 50/60 cycles. For larger loads, control can be used with low-cost F-P Type 250A Multiple Relays. Bulletin on request. Write The Fisher-Pierce Co., 86 Pearl Street, So. Braintree 85, Mass.

FISHER FP PIERCE
PHOTOELECTRIC LIGHTING CONTROLS
AN AFFILIATE OF SIGMA INSTRUMENTS, INC.

▲ For more details circle NED-307 L9 on enclosed inquiry slip ▲

thanks to XEROGRAPHY...
"Delta's DC-8 Program Got a Real Assist."
C. E. WOOLMAN, President and General Manager, Delta Air Lines

Delta Air Lines Saves $58,000 Yearly

REPRODUCING DC-8 Jet training and maintenance manuals • projection slides • parts lists • work schedules • engineering drawings • forms • standard practices

Delta Air Lines, first in its industry to see the economic possibilities of xerography, in 1952, has added another $12,000 to an already impressive annual xerographic saving of $46,000.

Delta's DC-8 jet program got a real assist from the use of xerography in launching its Royal JET Service between New York and Atlanta in September and to Chicago-Atlanta-Miami in October, with even more DC-8 service this fall to Detroit, Dallas, and New Orleans. Delta is spending 80 million dollars on its jetliner fleet of the famed Douglas DC-8's and Convair 880's.

The use of XeroX® copying equipment in setting up Delta's DC-8 operations covered the reproduction of maintenance manuals, familiarization booklets, training courses, and engineering drawings.

Xerography is a clean, fast, dry, electrostatic process that copies anything written, printed, typed, or drawn, onto ordinary paper, offset paper masters, or vellum intermediates for use in diazo-type machines.

At Delta, XeroX copying equipment is used mainly for the preparation of offset paper masters from which multiple copies are quickly run off on offset duplicators.

Xerography can help *you*, too.

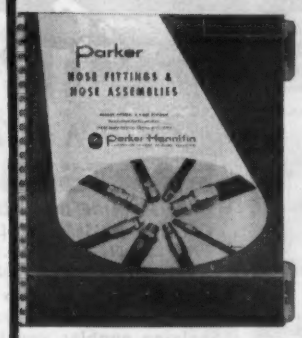
Write for proof-of-performance folders showing how firms of all kinds and sizes are speeding paperwork duplicating and saving thousands of dollars yearly by xerography.

HALOID XEROX INC.
59-214X Haloid St., Rochester 3, N. Y.
BRANCH OFFICES IN PRINCIPAL U. S. AND CANADIAN CITIES
Overseas: Rank-Xerox Limited, London, Eng.

HALOID XEROX®

▲ For more details circle NED-308 L9 on enclosed inquiry slip ▲

Hose and hose fittings are easy to select from this 72-page Parker Catalog



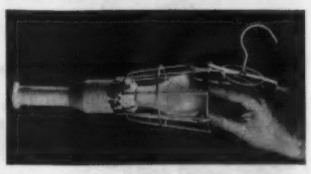
It's easy to choose the best Parker Hose and Parker Hose Fittings to handle practically any gas from air to freon, practically any liquid from water to synthetic hydraulic fluids from the data, specs, and recommendations in the complete Parker Hose Fittings and Hose Catalog 4400. Also includes useful information on assembling both standard and Parker "no-skive" Hoze-Lok Fittings to 15 types of Parker Hose.

Your Parker Hose Fittings and Hose distributor, listed in the Yellow Pages, can furnish you a copy. Or write . . .

Parker FITTINGS AND HOSE DIVISION
17325 Euclid Avenue • Cleveland 12, Ohio
A DIVISION OF PARKER-HANNIFIN CORPORATION

▲ For more details circle NED-309 L9 on enclosed inquiry slip ▲

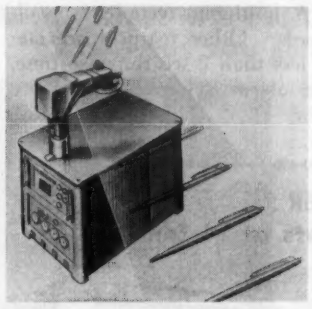
PORTABLE LAMP GUARD facilitates bulb changing



It is not necessary to remove this wire guard to change the bulb of this portable lamp. End swings open for bulb changing and is released with an upset thumb screw. Hook is located in the center of the guard end. Heavy gage wire is cadmium plated. Made by **Ericson Mfg. Co.**, 1660 Hayden Ave., Cleveland 12, Ohio.

▲ For more details circle NED-312 L9 on enclosed inquiry slip ▲

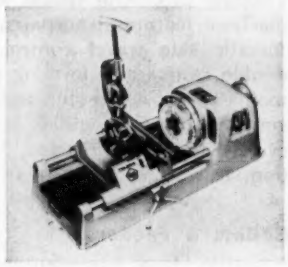
HANDLING & ASSEMBLING MACHINE can automatically perform many jobs



Electronic brain of the TransfeRobot, a mechanical version of an arm and a many-fingered hand, can be "taught" to perform many tasks involved in parts handling, assembling, and machine operating. A program panel in the machine base can be set up to perform automatically simple, repetitive, manual tasks in ½ hr. Machine can assemble such diverse parts as toys and carburetors, cigarette lighters and typewriters, computers and missiles. It has high "manual" dexterity and precision in its work. Once set up, it continues that work until reset. Space required is 6 sq ft. Made by **U. S. Industries, Inc.**, Robodyne Div., 8411 Second Ave., Silver Spring, Md.

▲ For more details circle NED-313 L9 on enclosed inquiry slip ▲

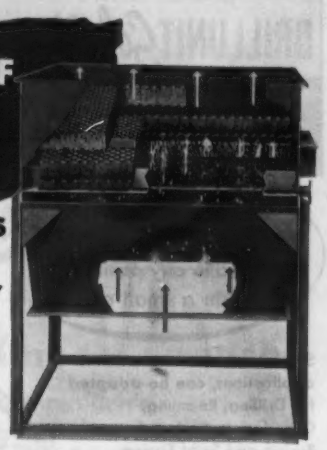
POWER PIPE MACHINE threads, cuts, reams pipe and bolts



Ability to use the die head, cut-off tool, and reamer as close as ¾ in. from the chuck is built into the No. 98 power pipe machine. An offset roller cutter provides maximum visibility of the work during cut-off. Maximum carriage travel is 10 in. Cam type or quick-opening die heads are supplied, the former mounted directly on the carriage. Quick-opening die heads are mounted with an adapter plate. Machine will thread, cut, and ream all sizes of pipe through 2 in. and thread ¼ to 1½-in. bolts. A stand, either open or enclosed and with or without wheels, is an accessory. Made by **Toledo Pipe Threading Machine Co.**, 1445 Summit St., Toledo 4, Ohio.

▲ For more details circle NED-314 L9 on enclosed inquiry slip ▲

NEW AAF Type M CYCOIL



COLLECTS MISTS and VAPORS ECONOMICALLY

Why put up with polluted air from plating tanks and other vapor-discharging industrial processes? AAF's new Type M CYCOIL costs less, is more efficient, takes up less space, and weighs less than conventional wet collectors used for this application.

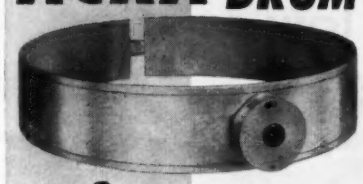
Exhaust air or gas is scrubbed by thousands of flooded contact surfaces in the fluid bed pad. No liquid retention, no recirculating pumps, no heavy scrubbing or eliminator section required. Normal water supply, only 3 quarts per hour per 1000 cfm.

Available in 7 sizes, from 1,200 to 24,500 cfm. Write for Type M CYCOIL Bulletin 286.

American Air Filter COMPANY, INC.
391 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

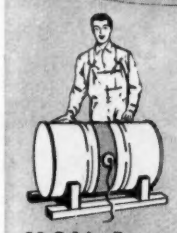
▲ For more details circle NED-315 L9 on enclosed inquiry slip ▲

ACRA ELECTRIC DRUM HEATER



MELTS *Speeds up* **SLOW FLOW MATERIALS**

• RESINS • WAXES • OILS • GREASES
MOLASSES—TARS—MANY OTHERS



SAVES TIME, MONEY, MATERIAL

Turns solid or slow flow materials into smooth flow liquids, quickly and completely emptied from their drums. Quick, easy, tight gripping on-off assured by spring actuated toggle clamp. 3 heat selector switch. Heaters used 1 or more to a drum.

PAYS FOR ITSELF IN HOURS PAYS PROFITS FOR YEARS!

AC/DC Models for 3000 watts, 230 volts or 2500 watts, 115 volts. 5" aluminized steel heater band. Long life nickel-chrome heating element. Fully guaranteed against defects in material or workmanship.

55 GAL. Drum Heater #RH-1, shipping weight 10 lbs. $29.50

5 GAL. Drum or straight sided Pail Heater #PH-5—S/W 5 lbs. $16.75

FOB Chicago

ORDER DIRECT FROM
ACRA ELECTRIC CORPORATION
9907 Pacific Ave. • Franklin Park, Ill.

▲ For more details circle NED-310 L9 on enclosed inquiry slip ▲

"CONTAINERIZE" waste & rubbish as it accumulates

Eliminate unsightly junk heaps, battered cans or open bins which let trash blow and scatter. Place big, clean Dempster-Dumpster Containers at points of waste accumulation inside and outside your plant. When full, they are picked-up, hauled and dumped by one man and one truck-mounted Dempster-Dumpster. Regardless of the type of waste you generate, there is a container built to provide enclosed, big-volume storage for it. You can own this low-investment System, or a nearby Dempster-Dumpster Contract Hauler will place Containers in your plant and empty them for a nominal fee.

RUBBISH SLUDGE HOT MATERIALS DUST LIQUID

WRITE TODAY

For your free copy of the new manual, "How to Cut Industrial Waste Disposal Costs," or the name of the Dempster-Dumpster Contract Hauler in your area.

Dept. NE-11 Dempster Brothers, Knoxville 17, Tenn.

▲ For more details circle NED-311 L9 on enclosed inquiry slip ▲

2 BIG BUYS

BORROUGHS SHOP EQUIPMENT

Built to STAND UP—designed to STAND OUT—with features that are exclusively Borroughs . . . Borroughs Shop Equipment line includes Work Benches, Tool Stands, Utility Carts, Shop Desks and Tables, as well as portable and semi-portable Work Bench Kits and many other accessories. BUY BORROUGHS and get TOP VALUE!

BORROUGHS STEEL SHELVING

Here's America's most simple, most flexible, most rapidly assembled Shelving—with the handiest and most efficient Shelf Support Brackets known to the industry. Just insert 4 Shelf Support Brackets into post slots, and then tilt shelf into Support Brackets—that's it! Except for the top shelf (2 nuts and 2 bolts) no other nuts or bolts are required for Borroughs shelves—and no special tools are needed to assemble units. Each individual unit is complete in itself—any unit or shelf can be moved independently. Full details for the asking.

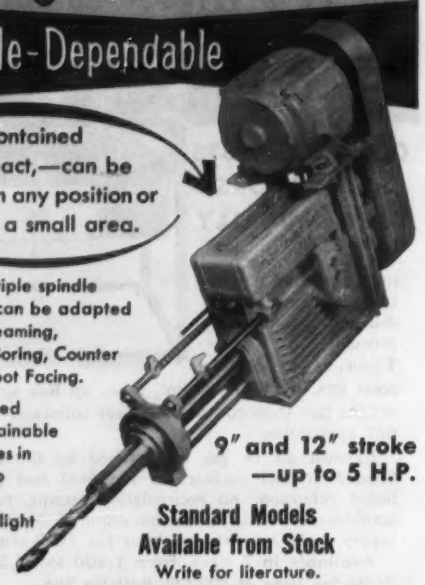
send for literature Represented in Sweet's Catalog, Plant Engineering File 4G BO

BORROUGHS MANUFACTURING COMPANY OF KALAMAZOO
A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT
3072 NORTH BURDICK ST. amp® KALAMAZOO, MICHIGAN

▲ For more details circle NED-316 L9 on enclosed inquiry slip ▲

DRILLUNIT *Solves* Drilling Problems

Flexible-Dependable



Self contained —Compact,—can be mounted in any position or angle, in a small area.

Single or Multiple spindle applications, can be adapted for Drilling, Reaming, Chamfering, Boring, Counter Boring and Spot Facing.

Stroke and feed variations obtainable without changes in the unit.—Step feed drilling possible with slight modification.

9" and 12" stroke —up to 5 H.P.

Standard Models Available from Stock

Write for literature.

DRILLUNIT, INC.
HYDRAULIC DRILL UNITS
3267 Wight Street • Detroit 7, Michigan

For more details circle NED-317 L9 on enclosed inquiry slip

FICTION and FACT

FICTION: R P Paint Arrestor Equipped Booths Cost More than other Methods of Paint Overspray Removal.

FACT: Comparisons Show R P Paint Arrestor Booths' Operating Cost 30-50% Less than Water Wash Booths of Equal Size.

RP PAINT ARRESTORS

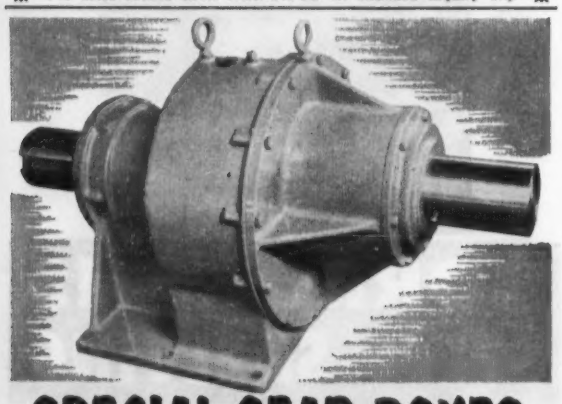
Photo Courtesy American-Standard, Elyria, Ohio Plant

R P Paint Arrestors save money in other ways, too. Maintenance is simple—labor costs average 40 to 85% less than for equivalent water wash booths. Down-time is reduced considerably, production is increased, less floor space required. And, with all the savings, R P Paint Arrestors are more efficient—and adaptable to almost every type operation. Write for more information.

Products of Research

RESEARCH PRODUCTS Corporation
Dept. 32, Madison 10, Wis.

For more details circle NED-318 L9 on enclosed inquiry slip



SPECIAL GEAR BOXES

Announcing a new Sewall Service

Designing . . . Development . . . Manufacturing . . . to help solve your special gear box problems. We're ready to work with you at any stage of your project's development. From scratch . . . we'll design your gear boxes . . . just give us your basic idea. From your prints . . . let us submit our quotation on your requirements. We invite your inquiry . . . Check Sewall Service today.

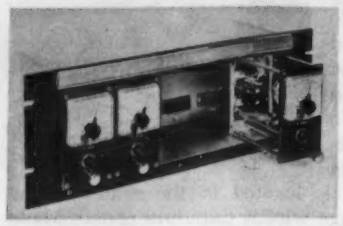
Complete gear service . . . custom made gears . . . made-to-order sprockets . . . special gear racks —to order . . . standard gear racks in stock

SEWALL GEARS

E. B. SEWALL MFG. CO.
Dept. D 705 Raymond Ave.
St. Paul 14, Minn. Midway 5-7721

For more details circle NED-319 L9 on enclosed inquiry slip

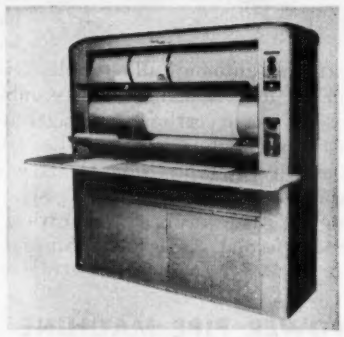
MULTICHANNEL GAGE detectors can be remotely located



Radiation detector with a useful range of 1 million to 1 is employed in this low cost multichannel gaging system suited for applications requiring the use of multiple detectors. Amount of coal, ore, grain, or other similar materials stored in holds, bins, or elevators can be controlled over great distances by the system. Several detectors allow determination of the level at various stages of loading. Each moisture sealed, shockproof probe contains a transistorized miniature ratemeter, the output of which is displayed on a meter that may be up to 2 miles away. A multipoint recorder is available for permanent records. Other features are stability from 0 to 175° F, less than 2-sec response time, and visual and audible alarm systems. Made by **Tracerlab Inc.**, Industrial Div., 1601 Trapelo Rd., Waltham 54, Mass.

For more details circle NED-320 L9 on enclosed inquiry slip

DRY WHITEPRINTER 44-in. unit prints at 14 fpm



Speedmaster Model 1400CS semiautomatic dry process whiteprinter produces exact, same-size copies of tracings, drawings, sketches, charts, or forms from any translucent original. It handles cut sheets or roll stock up to 44 in. wide, any length, in a synchronized two-step printing and developing process at speeds to 14 fpm. Rated 1500 w, machine features transparent plastic tracing tray, automatic side travel control for developer belt, four double casters and leveling pads, and pushbutton ammonia pump. Full stop and reversal control for emergency return of originals is provided. The 115-v 60-cycle machine is priced at $1595. Made by **Copymation, Inc.**, 5650 N. Western Ave., Chicago 45, Ill.

For more details circle NED-321 L9 on enclosed inquiry slip

Collets & Feeders

Sutton Tool Co.—Sutton collets and feeders are used on automatic screw machines, turret lathes, engine lathes, milling machines, and grinders. The 24-page Catalog 23 features standard, quick-change Master, and full-floating Master collets, and Master and Super feeders. It also devotes several pages to special tools designed to handle unusual work-holding problems.

For more details circle NED-322 L9 on enclosed inquiry slip

MEASURE RPM

as low as 2/100 of 1 RPM
as high as 100,000 RPM
with Improved JAQUET SPEED INDICATOR

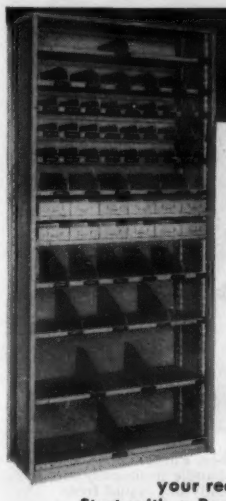
a Chronometric Tachometer of highest accuracy and dependability

4 MODELS
0-200 RPM
0-2,000 RPM
0-20,000 RPM
0-100,000 RPM
measuring also FPM WITH WHEEL TIP

SEND FOR BULLETIN 735

HERMAN H. STICHT CO., INC. 27 PARK PLACE, NEW YORK 7, N. Y.
Tachometer Headquarters

For more details circle NED-323 L9 on enclosed inquiry slip



NEW FLEXIBILITY... NEW ECONOMY...

FGM

QUICK-BILT
PARTS BINS

SHELVES SLIDE IN AND OUT... CAN BE RAISED OR LOWERED EVEN WHEN LOADED . . . WITHOUT REMOVING DIVIDERS!

Build parts bins to fit your own needs. F-G-M "Quick-Bilt" Shelving enables you to "do-it-yourself" . . . to build exactly to your requirements.

Start with a Basic Unit: base, top shelf, two sides and back. Slide the desired number of shelves in at the heights you want. Snap on the size dividers you need at the locations selected. That's all. No tools . . . no expensive set-up time.

A number of accessories are available to complete your storage set-up. Write for Folder No. 716.

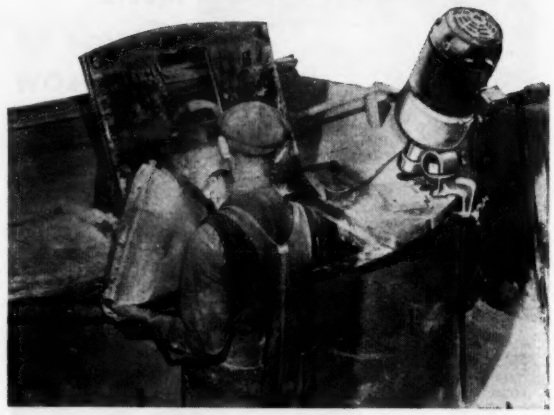
The FRICK-GALLAGHER Mfg. Co.
112 S. MICHIGAN AVENUE
WELLSTON, OHIO

©1958 AA-3

BONDERIZED STEEL EQUIPMENT FOR EVERY STORAGE NEED

For more details circle NED-324 L9 on enclosed inquiry slip

Mix fluids fast at low cost



Get a uniform product—often in seconds by flipping a switch

Put new zip into your production! Power-mix fluids in any open tank or container—with LIGHTNIN Portable Mixers.

Flip a switch, and powerful LIGHTNIN propeller stream goes to work—*tumbles* as it *rotates* the batch for complete uniformity, often in a few seconds.

Suspend heavy solids . . . mix, blend, or stir liquids . . . make up solutions . . . disperse gases, wash, circulate, control batch temperatures. Your mixing results are *unconditionally guaranteed* when you mix with LIGHTNINS. Thousands in use; many 25 years and more.

Mixer locks instantly at any position. True-running shaft is quickly removable; cannot loosen or jam in service. Widest choice of ball-bearing motors. For full details, request 28-page illustrated Catalog B-108.

Mixers for permanent mounting, too Full selection of LIGHTNINS for tanks to 6 million gallons. Sizes ¼ to 500 HP. For details, request illustrated Catalog B-109.

30 PORTABLE MODELS, direct or gear drive, electric or air driven. Sizes ⅛ to 3 HP.

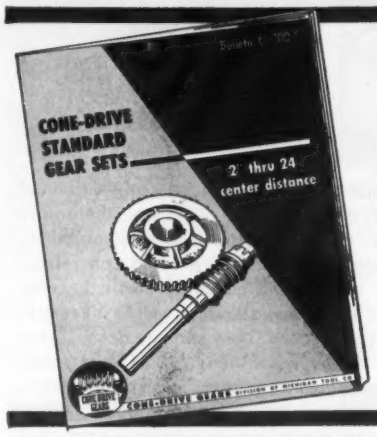
Lightnin® Mixers

MIXCO fluid mixing specialists

MIXING EQUIPMENT Co., Inc., 165-m Mt. Read Blvd., Rochester 3, N. Y.
In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 19, Ont.

For more details circle NED-325 L9 on enclosed inquiry slip

WORM GEARS

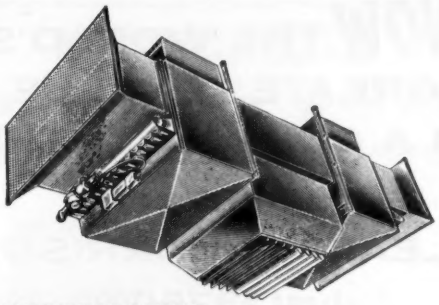


NEW BULLETIN CD-700-C free to design engineers

Details of hundreds of matched sets of double-enveloping worm gears. Capacities from fractional to over 1600 hp. Drawings, charts and photos illustrate 16-page booklet.

CONE-DRIVE GEARS
DIVISION MICHIGAN TOOL COMPANY
7171 E. McNichols Rd. • Detroit 12, Michigan

For more details circle NED-326 L9 on enclosed inquiry slip



TOUGH BUYERS DEMAND

REZNOR downflow heaters for high-ceiling applications

Where cranes, machinery, or inventory stacks require abnormally high placement of the heater, the tough buyer insists on a Reznor Downflow Heaters. The Downflow projects heat to the area where it's needed, even from a height of 40 feet! Simple to install, too.

Available with aluminized or stainless steel heating elements, gas modulation, adjustable louvers and electric ignition. Write for catalog.

REZNOR Manufacturing Co., Dept. 41F, Mercer, Pa.

For more details circle NED-327 L9 on enclosed inquiry slip

Rapistan® APC T.M.

pressure-sensing conveyor

Operates on fraction of usual power needs

Rapistan's new APC (Adjustable Pressure) Conveyor operates on less horsepower than any other form of power belt conveyor. Up to 200 ft. of conveyor powered by 1/3, 1/2 or 3/4 hp drives. Because power requirements are so exceptionally low, drive units are less costly, and belt tension (therefore belt stretch) is kept at absolute minimum. This means less maintenance for further savings.

Write for new Bulletin 1200 illustrating APC Conveyor.

Rapistan — new ideas in materials handling

The RAPIDS-STANDARD CO., Inc., 615 Rapistan Bldg., Grand Rapids 2, Mich.

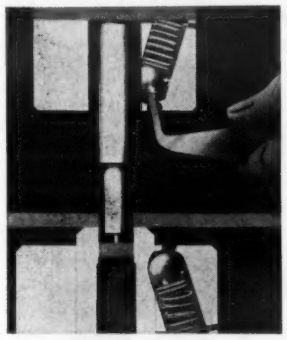
For more details circle NED-328 L9 on enclosed inquiry slip

WINCH-HOISTS in 750 to 4000-lb pull capacities

Six models with pulling capacities from 750 to 4000 lb comprise line of winch-hoists with quick-reversing handles. Operator can quickly place handle on the most convenient side regardless of position in which winch-hoist is operating. Units are equipped with aircraft cable, a cable wind-up handle, and lifetime lubricated bearings. Safety handles will bend before exceeding the 100-per cent overload capacity. Made by **Beebe Bros. Mfg. Co.**, 2724 Sixth Ave. S., Seattle 4, Wash.

For more details circle NED-329 L9 on enclosed inquiry slip

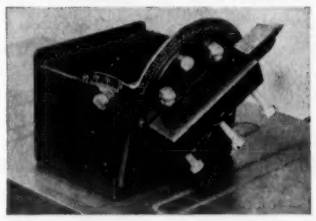
SLUG SHEDDING PUNCH eliminates slug pulling in dies



Coil spring extending 3/64 in. beyond the punch point in the high speed steel body of the Slug-Shedder compresses during piercing, then pushes each slug away from the point. Slug pulling is eliminated in any die regardless of the material being pierced or the thickness of the material. Slug-Shedder punches are available with round punch points in diameters from 1/16 to 5/8 in. and punch lengths from 2 to 3 in. Special sizes and shapes can be furnished. Standard shank diameters and ball lock make them interchangeable. Made by **Allied Products Corp.**, Richard Brothers Punch Div., 26500 Capitol Ave., Detroit 39, Mich.

For more details circle NED-330 L9 on enclosed inquiry slip

TOOL BIT GRINDING FIXTURE for use on surface grinders



Any combination of rake and clearance angles can be set up quickly on this tool bit grinding fixture. For use on surface grinders, it grinds all sides in one setting and holds any single point tool, including threading, box, boring, and lathe tools. Compound angle markings are stamped on the 3 x 3 x 3-in. fixture. Tool bit capacity is 1/2 x 2 1/4 in. Special sizes handle bits up to 2 1/2 in. square. Price is $16.50. Offered by **Montgomery & Co.**, 401 Morris Ave., Springfield, N. J.

For more details circle NED-331 L9 on enclosed inquiry slip

For more details circle NED-332 L9 on enclosed inquiry slip

Snap-on

heavy-duty electric impact wrench

- ½-inch drive
- 2,000 impacts per minute
- Motor runs continuously — can't stall — can't burn
- Balanced for easy handling
- 115-volt or 220/230-volt models
- *Snap-on* quality — the best

Write us or call your *Snap-on* representative.

SNAP-ON TOOLS CORPORATION
8110-K 28th Avenue • Kenosha, Wisconsin

For more details circle NED-333 L9 on enclosed inquiry slip

How quality Johnson Bearings save money for you

The cost of a single bronze bearing is but a minute fraction of the cost of a shut-down on your production lines due to the failure of a single bearing. That's why smart bearing buyers always order guaranteed quality Johnson cast bronze bearings.

Johnson bearings are cast in Johnson's famous alloy #72, which many millions of machine hours have proved best for general purpose use. More than 900 standard sizes in 200 different ID-OD combinations are available from stock. The ID range is 1/4" to 4 1/2"—OD range 3/8" to 5". Lengths range from 5/8" to 9 3/4". The Johnson Bearing Catalog lists all stock items—gives data on altering to provide oil grooves, slots and holes. Ask your distributor.

Johnson Bronze JOHNSON Bearings
580 South Mill Street • New Castle, Pa.
Subsidiary: Apex Bronze Co., Oakland, Cal.

For more details circle NED-334 L9 on enclosed inquiry slip

Rapisteel® slotted angle

- more design flexibility
- greater structural strength
- superior galvanized finish

Save time, cut materials and construction costs with Rapisteel by Rapistan. New design builds stronger structures faster — lets you erect storage racks, work benches, mezzanines, dollies, electrical panel boards — any construction idea you have. Completely re-usable, lifetime resistance to corrosion.

RAPISTEEL CONSTRUCTION IDEA MANUALS — FREE!
Write today for these new, illustrated Rapisteel construction guide books

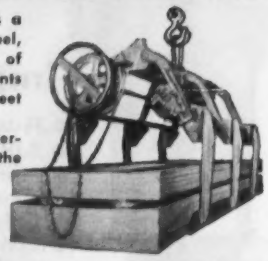
Rapistan

The RAPIDS-STANDARD CO., Inc.
Dealer Products Division
616 Rapistan Building
Grand Rapids 2, Michigan

For more details circle NED-335 L9 on enclosed inquiry slip

Wide or Narrow...

1 C-F LIFTER HANDLES THEM ALL



Whether your production requires a few or many widths of sheet steel, 1 C-F Lifter, with its wide range of jaw and carrying angle adjustments will probably meet all your sheet handling requirements.
Adjustments are made by the operator in a few seconds, permitting the lifter to shift from wide to narrow sizes almost instantly.
Because it can pick up, carry and unload more loads per hour, using less man and crane time than any other method, a C-F Lifter will soon pay for itself.

Bulletin SL-30 gives you the complete story of C-F Lifter advantages to you. Ask for it today. There is no obligation.

CULLEN-FRIESTEDT CO.
1304 South Kilbourn Avenue • Chicago 23, Illinois

▲ For more details circle NED-336 L9 on enclosed inquiry slip ▲

Kling COMBINATION SHEAR-PUNCH-COPER

• Handles Multiple operations at one time!
• Speeds up production!
• Reduces maintenance costs!

All the cost-cutting, production-increasing versatility and construction features you need to increase your profits and speed up your deliveries are combined in this one Kling Jack-of-all-jobs machine. You can choose the one best for your needs from three sizes offered...Write for Kling Combination Bulletin 347A.

KLING BROS. ENGINEERING WORKS
1320 N. KOSTNER AVENUE • CHICAGO 51, ILLINOIS
Export Distributor: Simmons Machine Tool Corp., 50 E. 42nd St., New York 17
Exclusive Canadian Distributor: Rudel Machinery Company, Limited

▲ For more details circle NED-337 L9 on enclosed inquiry slip ▲

If you are USING, BUYING, OR PLANNING TO BUY...

MACHINE TOOLS

Easy to install, easy to adjust, Empco Leveling Jacks provide a solid foundation for machine tools, automation lines, large surface plates, tool room and production equipment of all types. Used with Vi-Sorb Mounting Pads, they further reduce vibration, retard creepage, often eliminate the need for anchor bolts.

6 STYLES; 25 MODELS

...you'll want to know how Empco Leveling Jacks will protect your investment, give you better machine performance, longer machine tool life. Write for Bulletin No. 100.

Please send Bulletin No. 100.

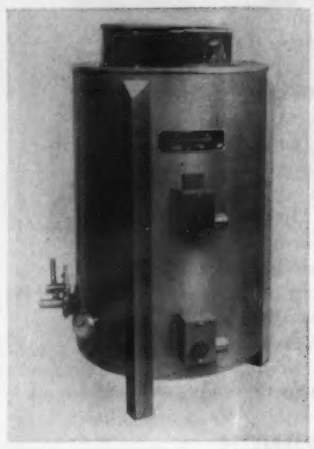
Name_____
Address_____
City_____ Zone____ State_____

ENTERPRISE MACHINE PARTS CORPORATION
2727 Jerome Street, Detroit 12, Michigan

EMPCO LEVELING JACKS

▲ For more details circle NED-338 L9 on enclosed inquiry slip ▲

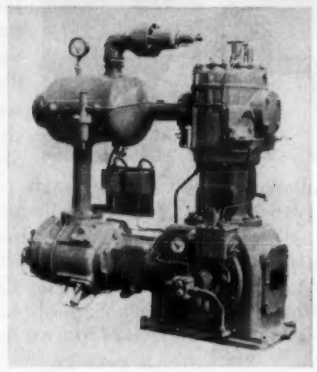
ELECTRIC ADHESIVE MELTER
5.3-kw unit has two heat zones



Top section of the Sta-Warm electric adhesive melter is designed for freeing adhesive from 50 to 100-lb drums, whereas lower section is for melting the material. Suitable for lab and production work in industrial operations using synthetic hot-melt, unit has two thermostats with selective ranges of 15 to 450° F. Model AD24SS shown has stainless steel tank measuring 16 in. diameter by 28 in. deep. Unit operates on 230 or 460-v, single or three-phase current, with total connected load of 5.3 kw. Made by **Sta-Warm Electric Co.**, 626 N. Chestnut St., Ravenna, Ohio.

▲ For more details circle NED-339 L9 on enclosed inquiry slip ▲

AIR COMPRESSORS
booster type delivers 590-1180 cfm



Designed for long line booster service, two air-cooled, double-acting, single-stage air compressors operate on minimum intake pressures of 45 psi. They deliver from 590 to 1190 cfm through long lines at 100 psi with lower than normal discharge velocities and consequent low air temperatures. Model AG 1-2 booster compressor has cylinders working in parallel and is equipped with a pulsation damper. Smaller Model AG 1-1 has a single cylinder and no pulsation damper. Both feature integral safety devices which function automatically when suction side pressure drops below a preset minimum. Operating speed is 730 rpm. Made by **Atlas Copco Eastern**, 610 Industrial Rd., Paramus, N. J.

▲ For more details circle NED-340 L9 on enclosed inquiry slip ▲

Channel-Type Lighting Supports

Steel City Electric Co.—Compiled for men who specify electrical equipment, 8-page Bulletin G-2 discusses channel type lighting supports for installing wiring and electrical lighting fixtures in plants and commercial buildings. Recommendations for applications in new and old buildings, installation procedures, features and data about the surface raceway system and the simplex system for fixture support are included.

▲ For more details circle NED-341 L9 on enclosed inquiry slip ▲

Acme Visible Cabinets give you inventory control at a glance

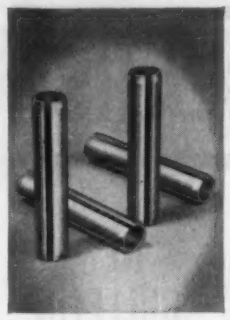
With an Acme Visible Control System on guard, there'll never be shortages in materials or equipment, or spare parts to interrupt the smooth flow of production. Inventory facts are at your fingertips. Visible signals flag your eye whenever an item needs reordering. For full facts on how you can control inventory this easy, efficient way . . . mail the coupon.

ACME VISIBLE
Acme Visible Records, Inc.
3411 W. Allview Dr., Crozet, Va.

To learn how my company can cut costs, increase efficiency—send free folders on systems for: ( ) Inventory Control ( ) Production Control

Name_____
Position_____
Company_____
City_____ State_____

▲ For more details circle NED-342 L9 on enclosed inquiry slip ▲



Cut fastening costs, save assembly time with SEL-LOK spring pins

Drill an ordinary-tolerance hole; drive a SEL-LOK—with hand tools or automatic assembly fixtures. That's all there is to installing these slotted tubular pins that lock by spring action. They will not work loose, yet can be removed and reused repeatedly. SEL-LOK spring pins eliminate costly tapping, reaming, peening and milling operations, as well as the rejects associated with close tolerances. They simplify design, save assembly time in countless applications . . . as keys, axles, cotter pins, hinge pins, stop pins or pivots . . . in metal assemblies or in products of nylon, Bakelite, hard rubber or fiber. Your SEL-LOK distributor stocks spring pins in carbon steel (plain or cadmium plated), corrosion-resistant steel and in beryllium copper. See him for complete details or write direct for Bulletin 2331 and samples.

INDUSTRIAL FASTENER Division SPS
JENKINTOWN 24, PENNSYLVANIA

▲ For more details circle NED-343 L9 on enclosed inquiry slip ▲

NOW THE WORLD'S GREATEST VALUE IN A COPYING LATHE

THE CLEARING-HARRISON

Just $3750.00*

†Base Price F.O.B. Chicago, Los Angeles, New York.

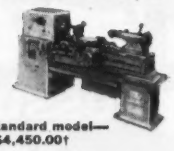
Here are copying lathes at prices you would normally expect to pay for a standard machine! Yet the Clearing-Harrison is a world beater of a lathe—carefully designed and as rugged as they come.

CHECK THESE FEATURES!

Standard Duty—Copying mechanism doesn't interfere with the use of the lathe for standard operations.
Induction Hardened Bed Ways—Ways are hardened and ground by Delapena equipment—virtually exclusive with the Clearing-Harrison.
Precision Hobbed and hardened gears.
Anti-Friction Bearings to the Spindle.
Gap Type Bed—Removable block in bed greatly increases maximum swing.

FIND OUT MORE ABOUT THE COPYING LATHE YOU CAN OWN FOR WHAT YOU'D EXPECT TO PAY FOR A STANDARD MACHINE. WRITE CLEARING TODAY!

13" Copying model—$4,850.00†
16" Copying model—$6,950.00†



13" Standard model—$2,950.00†
16" Standard model—$4,450.00†

Coast to Coast Service Facilities

Clearing's nationwide facilities assure you of prompt service always. Replacement parts and accessories are stocked at Clearing and are available thru all plants, at all service centers and thru all Clearing dealers.

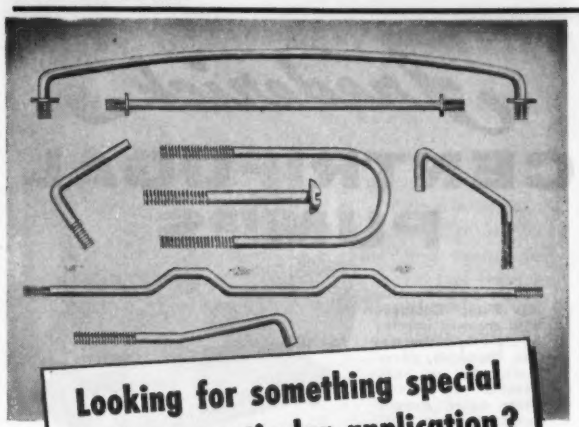
Clearing, division of U. S. Industries, Inc., also manufactures the Clearing-Axelson line of engine lathes, power presses of all types, dies and special tooling, and special equipment for the aircraft and missiles industry.

Write for Clearing-Harrison catalog.

USI Clearing Division of U. S. Industries, Inc.
6499 W. 65th Street • Chicago 38, Illinois

Plants in: Chicago, Ill. • Hamilton, Ohio • Los Angeles, Calif.

▲ For more details circle NED-344 L9 on enclosed inquiry slip ▲



Looking for something special ...for a particular application?

...rely on Ohio Rod Products for—

SERVICE—QUALITY—UNIFORMITY

OHIO ROD makes Special Headed and/or Threaded Fasteners in short and long length – in short or long runs. Headed, Threaded, Collared, Bent, or Offset.

Send drawings or blueprints for quotes and literature.

OHIO ROD PRODUCTS CO., INC.

20254 1st AVENUE • BEREA, OHIO

For more details circle NED-345 L9 on enclosed inquiry slip

NEW PACKLESS

Stainless Steel Solenoid Valves

½" to 2"—Piston Pilot Operated
⅛" ¼"—Direct Lift

"Velvetrol" cushioned closing eliminates damaging shock... Packless... Meet wide range of service and pressure requirements... Body and all internal parts stainless steel... Guaranteed coils hermetically sealed in thermoplastic casings, and glass-wound silicone insulated for high temperatures.

WRITE FOR NEW BULLETINS!

Bulletin K... Stainless Steel Solenoid Valves
Bulletin 500-B... Bronze Solenoid Valves

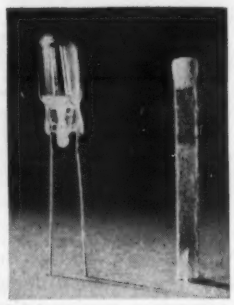
GOULD SOLENOID VALVES

VELVETROL

J. D. GOULD CO. 4707 MASSACHUSETTS AVE., INDIANAPOLIS 18, IND.

For more details circle NED-346 L9 on enclosed inquiry slip

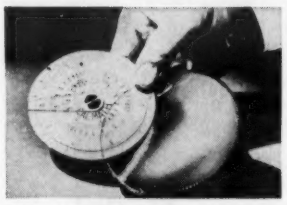
NEON GLOW LAMP provides bright, uniform light



Smooth, round end design of the NE-2M neon glow lamp results in brighter, more uniform illumination than random-tipped NE-2 and formed-tip NE-2E lamps. It can be viewed from a wide angle, suiting it for use bare, or in an indicator unit or panel. Standard brightness NE-2M and high brightness NE-2P versions operate on 110-125 v ac and a minimum of 90 v dc (NE-2M) or 150 v dc (NE-2P). Over-all length is ¾ in. and wire terminals are 1 in. long. Made by **General Electric Co.**, Miniature Lamp Dept., Nela Park, Cleveland 12, Ohio.

For more details circle NED-348 L9 on enclosed inquiry slip

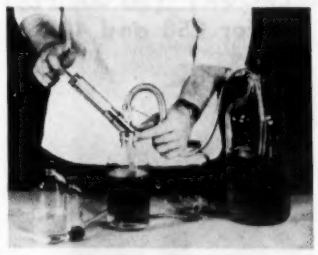
CIRCULAR SLIDE RULE performs various computations



Large numbers and graduations, and adequate spacing between scales make this pocket size circular slide rule easy to use. It performs multiplication, division, combined multiplication and division, fractions, squares, square roots, cubes, cube roots, proportions, percentages, areas, and circumferences. Figuring of discounts, retail mark-ups, and fuel consumption is also possible. The 3½-in. diameter rule is made of two aluminum discs and a clear plastic hairline indicator. The green and gold surface is glare-free. Price of $4.95 includes case and directions for use. Available from **Edmund Scientific Co.**, 180 E. Gloucester Pike, Barrington, N. J.

For more details circle NED-349 L9 on enclosed inquiry slip

VACUUM SAMPLING PUMP for thick liquids, powdered solids



Lift of the Golden Thief vacuum pump is about 25 ft of water at sea level. Lightweight unit for sampling service passes material through sanitary tubing directly to the sample container without contact with any part of the pump. It handles liquids up to the consistency of syrup, as well as powdered solids that tend to slump or seek their own level. Vacuum is created on the pump handle up-stroke. Stainless steel and aluminum models with interchangeable parts fits neck opening sizes from 22 mm to wide-mouth Mason jars. Made by **W & W Mfg. Co.**, Box 9311, Chicago 90, Ill.

For more details circle NED-350 L9 on enclosed inquiry slip

New **ROLLPIN APPLICATION DATA!**

Esna's latest Rollpin booklet gives you valuable information on where to use and how to install these versatile, all-purpose fasteners. A slotted, chamfered, cylindrical spring pin, Rollpin locks securely in place—yet can be drifted out and used over and over again. Write for it today and see how Rollpins can simplify design and production operations. Address Dept. R55-1137

ROLLPIN®

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.

For more details circle NED-351 L9 on enclosed inquiry slip

End processing problems caused by air-borne dust, abrasives, soot, smoke with the

HONEYWELL ELECTRONIC AIR CLEANER

These costly microscopic spoilers never get a chance to ruin the work when Honeywell's Electronic Air Cleaner is on the job. It electronically traps particles 100 times as small as those stopped by mechanical filters. Over-all efficiency is 6 times that of mechanical filters as measured by standard dust spot techniques.

PAYS FOR ITSELF! Send coupon today to learn how the ELECTRONIC AIR CLEANER saves you money in:

- film and data processing
- lens grinding
- furniture finishing
- electronic tube manufacturing
- controlled environment rooms for precision manufacturing, processing and assembly
- switch and relay rooms
- broadcast transmitters
- many other applications

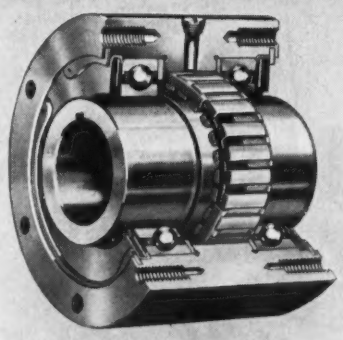
MINNEAPOLIS-HONEYWELL,
Dept. NW-11-36, Minneapolis 8, Minnesota
Please send free copy of Electronic Air Cleaner booklet, "A Close Look At Air-Borne Dirt."
We have the following problems:

Name _____
Company _____
Address _____
City _____ *Zone* ____ *State* _____

For more details circle NED-352 L9 on enclosed inquiry slip

NEW! HIGH-PERFORMANCE FORMSPRAG CLUTCHES

FOR OVER-RUNNING · INDEXING



OVER-RUNNING
INDEXING
BACKSTOPPING

Formsprag High-Performance Over-running (HPO) and Indexing (HPI) clutches are designed for those applications requiring super-performance. They have an improved sprag design and retainers that assure coordinated movement of all sprags and free-action for each sprag. This assures: positive engagement of every sprag—uniform distribution of driving load over all sprags—greater torque capacity—minimum drag during over-running—less wear—higher speed application—longer clutch life. For further information, write for HPO, HPI brochure. FORMSPRAG COMPANY, 23595 Hoover Road, Dept. 103, Warren (Detroit), Michigan.

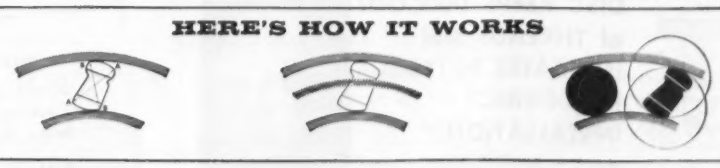
FORMSPRAG CLUTCHES
World's Largest Exclusive Manufacturers of Over-Running Clutches.

COMPARATIVE PERFORMANCE CHARACTERISTICS

1. **Longer Life**—At a given R.P.M., an HPO clutch has up to 70% longer life.
2. **Increased Speed** — HPO clutches can be run at up to 30% higher R.P.M. with same life span. Also, they can be modified for special applications requiring up to 20,000 R.P.M.
3. **High-Performance Indexing** — On 15° indexing, an HPI clutch with 475 lbs. ft. torque capacity can index 1200 times per minute without slip or backlash.

For further information, send for descriptive HPO, HPI brochure.

HERE'S HOW IT WORKS



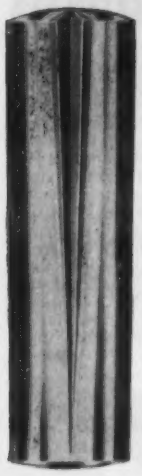
Formsprag clutches have a full complement of sprags between concentric inner and outer races. Dimension AA is greater than BB. Rotation of one race in "driving" direction causes the sprags to wedge, transmitting full torque from one race to the other.

An energizing spring keeps the sprags in light contact with both races . . . there is thus no lost motion. When force is applied to the driving member, the driving torque is instantaneously transmitted between races, slippage or backlash is eliminated.

The sprag is, in effect, a "roller" of larger diameter having greater contact surface, and more sprags can be inserted within a given diameter for greater torque capacity. Also, sprags engage at constantly changing contact points to prolong clutch life.

For more details circle NED-347 L9 on enclosed inquiry slip

need DRIV-LOK grooved pins in SPECIAL MATERIALS?



- aluminum
- alloy steel-heat treated
- brass
- stainless-303 and 416
- bronze

DRIV-LOK Pins — the positive locking, solid steel body grooved fasteners — are also available in a variety of special materials to meet particular requirements of strength, corrosion resistance, electrical qualities, or combinations of these properties. Like all DRIV-LOK Pins, they are carefully made to exacting standards, are easy to install and will reduce your fastening and assembly costs.

Write us, describing your fastening requirements. Recommendations made and catalog sent without obligation.

DRIV-LOK SALES CORPORATION
717 Park Avenue • Sycamore, Illinois

For more details circle NED-353 L9 on enclosed inquiry slip

"Do you have the NEW CATALOG OF SWECO VIBRATING SCREEN SEPARATORS?"

It tells how SWECO Separators are saving time and money in such diversified fields as petroleum, chemical processing, mining, food processing, stone, clay and ceramics, paper and pulp, drugs, feed, fertilizers, paint and varnish, and many others.

Gives Specs and Screening Data

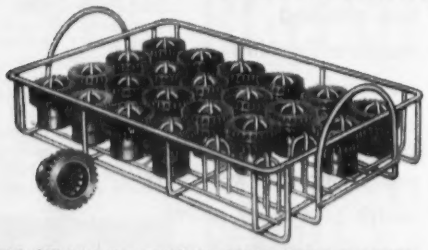
It shows pictures and describes 22 different models – including 18", 30", and 48" diameter units for high capacity and continuous operation. Also gives case studies and details about SWECO's application engineering and demonstration services.

Write for your copy today!
Ask for Catalog S-301-175

SWECO **Southwestern Engineering Company**
4800 Santa Fe Avenue, Los Angeles 58, California
Engineers — Constructors — Manufacturers

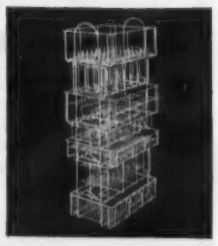
For more details circle NED-354 L9 on enclosed inquiry slip

EEZY-STAK BASKETS for Better Parts Handling



EEZY-STAK BASKETS SIMPLIFY PARTS HANDLING...CUT COSTS...REDUCE REJECTS!

WIPCO manufactures a complete line of Custom-Designed stacking (Eezy-Stak) and non-stacking baskets for handling all types of parts through every production and assembly process. WIPCO baskets can be made in any desired size or shape, and from any practical material.



Eezy-Stak baskets feature the exclusive Interlock Handle* which permits easy and safe stacking. Eezy-Staks are available in a wide range of standard sizes and metals which fit most parts-handling requirements.

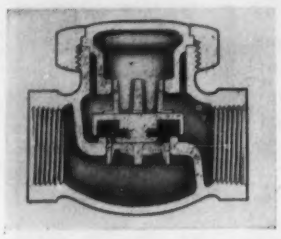
Write for Bulletin B-54

WIPCO BASKETS... *FROM INITIAL MACHINING TO FINAL ASSEMBLY AND SHIPPING*

WIRE AND IRON PRODUCTS INC.
1724 SIXTEENTH ST. • DETROIT 16, MICHIGAN

For more details circle NED-355 L9 on enclosed inquiry slip

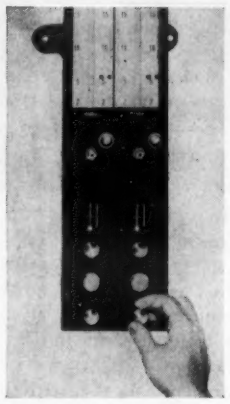
BRONZE VALVES
fluid type in 1/4 to 2-in. sizes



Integral body seats with a semicrown face are used in No. 229 C bronze globe and the No. 239 C bronze lift check valves. Available in sizes from 1/4 through 2 in., valves are rated 200 psi. They are regularly furnished with No. 4 Cranite discs for high pressure steam up to 450° F. When ordered for cold water, air, gas, oil, or gasoline service, valves have a No. 6 disc which is a special composition soft enough to make a tight seat on air or gas, yet resistant enough to withstand hot water. Slip-on holder facilitates replacing disc. Made by **Crane Co.**, 836 S. Michigan Ave., Chicago 5, Ill.

For more details circle NED-356 L9 on enclosed inquiry slip

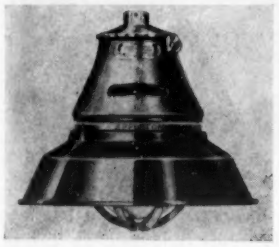
TANK GAGES
redesigned manometer-type



Redesign of this remote-indicating, manometer-type, continuous-purge tank gage emphasizes simplification of controls and operation. It will gage all types of liquids and can be used for any size or shape vessel, open or closed, overhead or underground. Periodic cleaning of tank lines is achieved through integral high-pressure purge. Gage requires only two air line connections for open tanks, three for closed or pressurized tanks. Gages can be located at up to 600-ft transmission distances and are available in one to 12-tube models in ranges up to 60 in. Made by **Meriam Instrument Co.**, 10838 Madison Ave., Cleveland 2, Ohio.

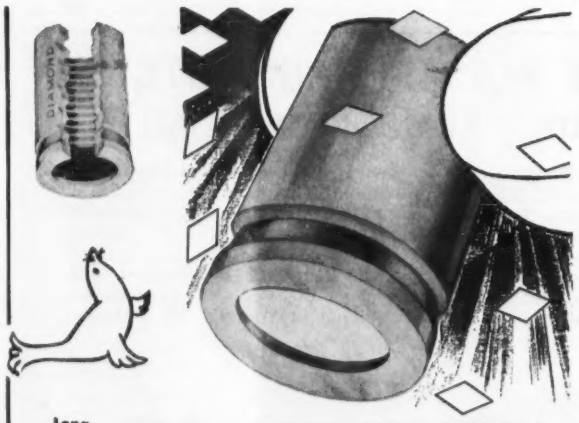
For more details circle NED-357 L9 on enclosed inquiry slip

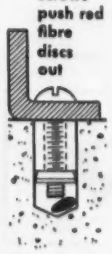
MERCURY VAPOR FIXTURES
for 250 and 400-w lamps



Wide choice of mountings is offered with the AA-51 fixtures for mercury vapor lamps. They are made in sizes for 250-w lamps of the clear or color corrected type and with 400-w lamps of clear, color corrected, or silver-white type. Five types of reflectors, suitable globes, and guards are also available. Made by **Appleton Electric Co.**, 1701 Wellington Ave., Chicago 13, Ill.

For more details circle NED-358 L9 on enclosed inquiry slip





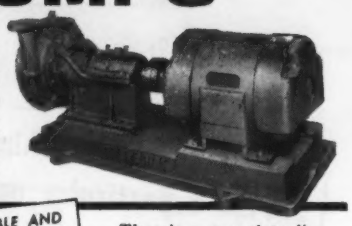
"DIAMOND'S NEW *Red Seal* MAKES THIS SCREW ANCHOR BETTER THAN ANY. RED FIBRE DISC KEEPS DIRT OUT of THREADS and INDICATES BOTTOM for CORRECT INSTALLATION,"
says J. A. WRIGHT, Vice President

Samples on request. Use your letterhead.

DIAMOND EXPANSION BOLT CO., INC.
GARWOOD, NEW JERSEY

For more details circle NED-359 L9 on enclosed inquiry slip

Frederick CENTRIFUGAL PUMPS



Single-End Suction SSV Pump—Equipped with enclosed impeller for clear liquids such as oils, chemicals, juices, acids, etc., or, open impeller for slurries, white water, sluggish liquids. Bulletin #107.

EFFICIENT, DEPENDABLE AND DURABLE FREDERICK PUMPS FEATURE:
- INDIVIDUALLY DESIGNED IMPELLERS
- INTERCHANGEABLE PARTS FOR FAST, EASY REPAIR
- AVAILABLE IN ANY METAL OR ALLOY FOR SPECIAL APPLICATIONS

There's a complete line of Frederick Pumps available. Single and double suction, single and multi stage pumps, including process, paper mill, circulating and boiler feed pumps, motor pump units and vertical pumps. Write for full information and name of nearest representative.

FREDERICK IRON & STEEL, INC.
FREDERICK *Established 1890* MARYLAND

Manufacturers of industrial and municipal products including Drop Balls, Manhole Covers & Frames, Stokers, Shears, Contract Castings.

For more details circle NED-360 L9 on enclosed inquiry slip

PURCHASING AGENTS' CHECK LIST FOR INDUSTRIAL SEATING

✓ COMFORT FEATURES TO MINIMIZE FATIGUE, BOOST PRODUCTION
Want to cut energy-robbing fatigue? Look for body-contoured backrest, large comfortable seat, spring steel backrest support that maintains correct firmness and fit for life of chair.

✓ ADJUSTMENT FEATURES FOR EFFICIENCY, VERSATILITY
Fit the chair to the job, and worker output rises! 4-Way adjustable back enables individual to move backrest up, down, backward, forward so it correctly supports small of back. Telescoping legs, adjustable at 1" increments, keep the worker at right height for the bench and job.

✓ CONSTRUCTION FEATURES FOR LONGER SERVICE, MINIMUM MAINTENANCE
Better-built chairs, require less repair, fewer replacements—give top value over the years. Look for welded tubular-steel frames, pre-shaped masonite seats, non-chipping oven-baked enamel finish—these are signs of good dollar value construction. Steel leg glides prevent gouged floors, no exposed bolts to cause worker injury.

YOU GET THEM ALL IN THE Royal® 515
...AMERICA'S TOP PRODUCTION CHAIR

SEND FOR FREE COMPLETE INDUSTRIAL SEATING CATALOG #7001
Shows dozens of specialized chairs and stools. Explains fatigue-free seating principles, helps choose the right chair for every job.

ROYAL METAL MANUFACTURING CO.
One Park Avenue, New York 16, Dept. 41-K.

For more details circle NED-361 L9 on enclosed inquiry slip

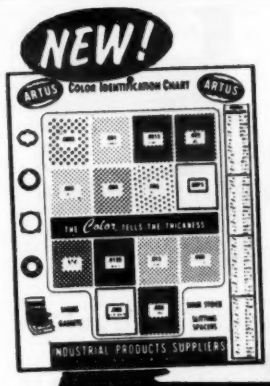
ELECTRIC MOTOR, FULLY SUBMERGED,

cleans itself as it runs in solvent

A new, safe motor cleaning solvent which is non - flammable, non-toxic, non-explosive and completely dielectric has been introduced under the trade name of MOTOR BATH by Ranco Industrial Products Corp., 13311 Union Ave., Cleveland 20, Ohio. The material is said to offer a completely revolutionary and entirely new concept to motor cleaning—that of submerging the entire motor in the cleaner and allowing it to clean itself by running electrically. Motors may be cleaned in this manner with a fraction of the time and cost of disassembly. MOTOR BATH may also be sprayed into large motors to clean them in place anywhere in the plant with complete safety. It dries without a greasy or oily residue; will not harm paint on motor housings; and has no effect, softening or otherwise on insulating materials. Motor Bath has no flash point or fire point.

Ranco Industrial Products Corp., 13311 Union Ave., Cleveland 20, Ohio. SKyline 1-6060 *Advt.*

▲ For more details circle **NED-362 L9** on enclosed inquiry slip ▲



A 'MUST' WHEREVER SHIMS ARE USED

ARTUS

PLASTIC SHIMS

THE COLOR TELLS THE THICKNESS

FREE

Write for this handy COLOR CHART, today!

Artus Plastic Shims are real time savers in production and maintenance. They're used by many of America's best known industrial corporations because they're more efficient, more convenient, always available.

Custom shapes to your specifications.

Write for Samples and Literature or Mail Blueprint for Test Sample.

THE **ARTUS** CORPORATION
201 South Dean St. · Englewood, New Jersey
LOwell 7-0900
formerly INDUSTRIAL PRODUCTS SUPPLIERS

▲ For more details circle **NED-363 L9** on enclosed inquiry slip ▲

BECOMES WATER INSOLUBLE 20 MINUTES AFTER APPLICATION

- Excellent water, brine and solvent resistance
- Can be applied to wet surfaces, and in humidity of 90-100%
- Prevents subfilm rusting
- Will not blister — cures from inside out
- Only one coat needed
- Can be brushed, or sprayed

Write for complete information, technical data and sample.
*Patent applied for

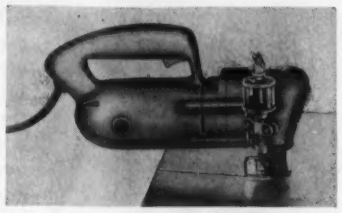
carboline COMPANY
32-J Hanley Industrial Ct.
St. Louis 17, Mo.

Specialists in Corrosion Resisting Synthetic Materials

▲ For more details circle **NED-364 L9** on enclosed inquiry slip ▲

PORTABLE NIBBLER

with automatic lubricator

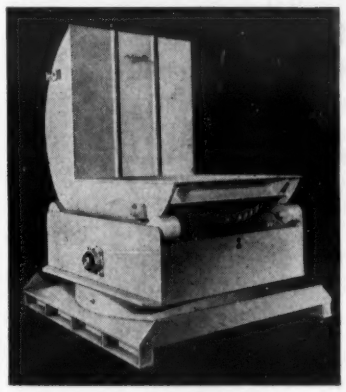


Equipped with a self-oiling lubricator, this portable nibbler will cut up to 10-gage stainless steel with minimum wear and tear on punch and die. Oil dispenser can be adjusted to drop oil at desired intervals, depending upon oil density. Nibbler cuts an even edge fast and without burrs. Two models of the lubricator are available for various nibblers now on the market. Made by **Modern Mfg. Co.**, 680 Davisville Rd., Willow Grove, Pa.

▲ For more details circle **NED-365 L9** on enclosed inquiry slip ▲

COIL TURNOVER CRADLE

handles up to 20,000-lb loads

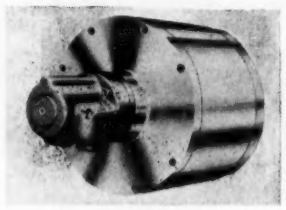


Rolls of coiled materials are automatically rotated and palletized with this turnover cradle. The coil is placed vertically on the cradle with a fork lift truck against the pallet. Cradle then rotates 180 degrees horizontally and 90 degrees vertically to palletize the coil and place it facing the truck for removal. Entire operation takes less than 20 sec. Capacity is 20,000 lb, and floor space required is 35 sq ft. Made by **La Deau Mfg. Co.**, 2702 San Fernando Rd., Los Angeles 65, Calif.

▲ For more details circle **NED-366 L9** on enclosed inquiry slip ▲

ROTATING AIR CYLINDER

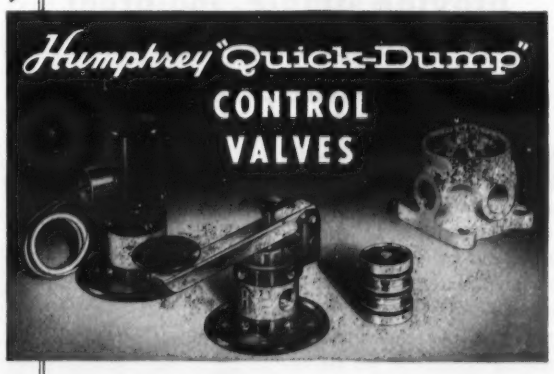
for speeds up to 3600 rpm



Low weight of Model RM rotating air cylinder, achieved with aluminum alloy housings and covers, lessens flywheel effect and allows spindle speeds up to 3600 rpm on metal-working machines. The double bearing inlet has packing that adjusts itself automatically through working pressures. Available in 3 to 16-in. bore sizes, cylinders have extra-long stroke when serving as actuators for chucks, collets, and other rotating holding devices. Complete assembly is precision balanced. Made by **S-P Mfg. Corp.**, 30201 Aurora Rd., Solon, Ohio.

▲ For more details circle **NED-367 L9** on enclosed inquiry slip ▲

small valves...big capacity...
fast cycling...low price



These Humphrey Valves are brand new in design and performance. Use them for valving air, oil, water, other liquids, gases, up to 125 psi. Also vacuum. Their big capacity, fast opening, quick exhausting, and smooth, positive action are like nothing you've ever seen before. Cycling speeds up to 30,000 per hour! Wide range of ⅛", ¼" and ½" models for manual, electric, piloted operation. 2-way, 3-way, 4-way types. Three methods of mounting — in line, manifold mounting, or new cartridge type for inserting internally in manifold. Readily engineered for OEM applications.

Write today for bulletin

Humphrey PRODUCTS DIVISION
DIVISION GENERAL GAS LIGHT CO.
Kalamazoo, Michigan

▲ For more details circle **NED-368 L9** on enclosed inquiry slip ▲

SHIPPING TAGS+++ PLAIN OR PRINT -ED

ESTABLISHED 1893 Campbell +

QUALITY PACKAGING SINCE 1893.

CAMPBELL BOX & TAG CO.
DIVISION OF STONE CONTAINER CORPORATION
MAIN & NEW STREETS SOUTH BEND 23, INDIANA

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MODERNIZE YOUR STOCKROOM AS YOU REBUILD YOUR INVENTORY!

"CUSTOM BUILD" TO SUIT YOUR NEEDS WITH MULTI-PURPOSE STACKBINS

In processing . . .

portable Stackbins carry common parts and supplies to points of usage without time-wasting transferal to other containers.

In storage . . .

Stackbins stack securely to any desired height, with or without Stackracks. Floor space requirements reduced — stock capacity increased.

In assembly . . .

Stackbin flexibility permits adapting assembly station to production requirements.

Available in sizes to suit your requirements

Bin No.	Width	Length	Bottom Length	Height	Weight (lbs.)
00	3½"	6"	4"	3¾"	1¼
0	4½"	8"	6"	4½"	1¾
1	5½"	12"	10"	4½"	3
2	7½"	15½"	12¼"	6"	5½
3	9"	18¾"	14¾"	7½"	9
4	12"	20½"	15¾"	9½"	14
5	15"	24"	18¼"	11"	20½
6	18"	30"	24"	12"	29

COMPARE THE PRODUCT
COMPARE THE PRICE

STACKBINS ARE MADE of heavy gauge steel, all-welded construction with positive stacking rim. Full flow hopper front and smooth interior make contents always visible — always accessible.

All Stackbin products are sold direct. Write for more information today!

STACKBIN CORP. 1081 Main St., Pawtucket, R. I.
Mfd. & sold exclusively in Canada by: Wickware-Stackbin, Ltd., Perth

STACKBIN SYSTEM
"Stacked and Still Accessible"

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FOR FAST TALK THAT PAYS OFF

your business needs...

ELECTRONIC AMPLICALL INTERCOMMUNICATION

the "clear line" to everyone in your business...

available with privacy handset, light and chime signals

★ AMPLICALL saves time and cuts costs because it provides *2-second speech contact* within and between all departments of your business. At the touch of a button, you get information, issue instructions, hold conferences, speed action in plant and office. AMPLICALL takes the load off busy switchboards, ends wasteful walking and waiting—pays for itself in speedier, more efficient operations. There is an AMPLICALL system for your exact needs. Get the facts today.

★ See your Classified Phone Book under "Intercommunication" for the nearest AMPLICALL specialist—or write us direct for full details.

RAULAND-BORG CORPORATION
3535-H Addison St., Chicago 18, Ill.

▲ For more details circle NED-371 L9 on enclosed inquiry slip ▲

For work in the 15-60 ton range, here's your press brake: Niagara Inboard Drive Series IB. Bends 3/16" material up to 6', and lighter gages to 14'.

Nothing like it. Has **everything**... to pay off in bigger production profits for you!

EVERYTHING'S INBOARD: Motor, belts, flywheel, clutch, brake, gears... yes, even connections, pitmans and ram adjustment mechanism... yet all accessible. Nothing protrudes.

SMOOTH, SENSITIVE ACTION: Ram can be micro-jogged smoothly, softly to a layout line... even through the work at full capacity, or stopped on a dime! Die setting is fast, easy.

RUGGED TO THE CORE: One-piece, welded steel frame with integral, wrap-around crown and extra deep, solid steel plate bed. Long lasting, laminated, non-metallic ways.

UNIFORMLY APPLIED POWER: Center drive for accurate work and die protection.

POWER CLUTCH, BRAKE & TREADLE: For greater production and less operator fatigue; or **manual clutch, brake & treadle** for low initial cost and quick, smooth response.

MUCH MORE, TOO: Adjustable speed drive, power or manual ram adjustment, front mounted control buttons, rocker type end guide bearings, centralized pressure lubrication, wide selection of gages, and numerous other features at your selection.

HERE'S THE WHOLE STORY: Wrapped up in new 12-page Bulletin 90... yours for the asking.

Streamlined, inboard drive

NIAGARA PRESS BRAKES

NIAGARA MACHINE & TOOL WORKS, BUFFALO 11, N.Y.
District Offices and Distributors Everywhere

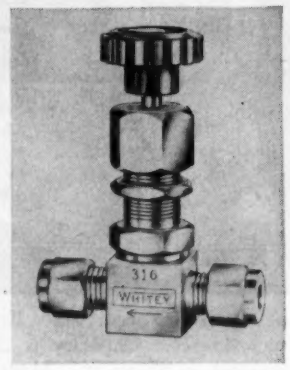
▲ For more details circle NED-372 L9 on enclosed inquiry slip ▲

PORTABLE SAND BLASTER
features pistol-grip blast gun

All types of abrasives can be used with Model B Sandy Jet sand blaster equipped with three sizes of job-suited nozzles. Featuring a new pistol - grip blast gun, blaster needs no special or separate room. Abrasive can be contained in small area with cardboard box or cloth curtain. Unit sells for $39.95 and includes an operator's hood, face shield, and two extra nozzles. It operates on 50 to 225-psi air pressure. Made by **ALC Co.**, R. D. 5, Box 40, Medina, Ohio.

▲ For more details circle NED-373 L9 on enclosed inquiry slip ▲

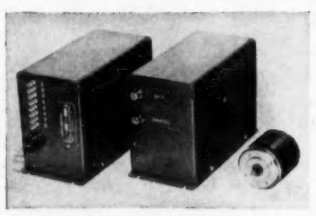
CONTROL VALVES
for liquid and gas processing



Micro regulating needle and fingertip control valve is offered in stainless steel, Monel, and Hastelloy in sizes from 1/8 to 1/2 in. Valves are recommended for processing applications involving viscous and volatile liquids, and for gases at high and low temperature, pressure, vacuum, and corrosion conditions. Made by **Whitey Research Tool Co.**, 1150 55th St., Oakland, Calif.

▲ For more details circle NED-374 L9 on enclosed inquiry slip ▲

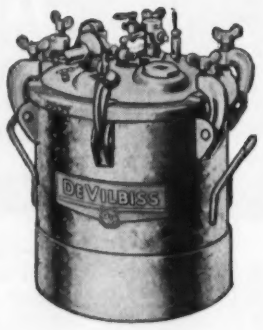
SERVO AMPLIFIER
drives 9-w servo motor



Transistorized, 762-A miniaturized servo amplifier is designed to drive a 9-w servo motor from 60-cps data. It includes damping networks, voltage and power amplifiers, and power supply, and operates directly from 117-v 60-cycle line. Unit is recommended for high performance positional servo loops and will operate with most positional data systems. Full output is obtained for 200 mv rms, into the input impedance of 100K. Carrier phase shift is +90 degrees. Damping is adjustable, error-rate. Made by **Industrial Control Co.**, 805 Albin Ave., Lindenhurst, L. I., N. Y.

▲ For more details circle NED-375 L9 on enclosed inquiry slip ▲

PRESSURE-FEED TANKS provide simple, foolproof supply system for paints, liquids



DeVilbiss Pressure-Feed Tanks are the simplest and most economical means of supplying fluids to spray guns and other devices at accurately regulated pressure. There are no working parts to get out of order . . . next to no air is required for operation . . . and they are built to last indefinitely.

One-piece, full-drawn, galvanized tanks. Coated to prevent rust or corrosion. Available with hand or motor-driven agitation. In 2-, 5-, 10-, or 15-gallon sizes. Call your DeVilbiss supplier, or write for Form I-3201.

DEVILBISS

THE DEVILBISS COMPANY
Toledo 1, Ohio
Branch Offices in Principal Cities

▲ For more details circle NED-376 L9 on enclosed inquiry slip ▲

RBC® Heavy Duty SELF-ALIGNING BUSHING ASSEMBLIES

- SAE 52100 Steel used for inner race and outer race.
- Precision hardened and ground bearing surfaces.
- Axial fracture of outer race permits insertion of the ball.
- Recessed snap ring maintains integral unit.

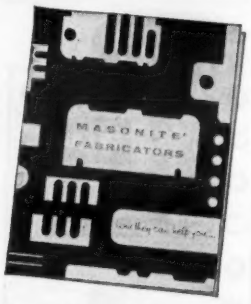
Designed for industrial and aircraft applications where misalignment tends to exist with high static loads or intermittent oscillation under load.

Let us help solve your misalignment problems . . . Write for Bulletin SF-86.

RBC ROLLER BEARING COMPANY OF AMERICA
Sullivan Way • West Trenton, N. J.

▲ For more details circle NED-377 L9 on enclosed inquiry slip ▲

THIS FREE BOOKLET



can help you improve design, production, quality

...describes all services of

MASONITE FABRICATORS

Learn how components fabricated of Masonite® hardboard can bring true economies to your production. Our free booklet tells how Masonite fabricators will saw, punch, drill, bend, shape and apply the finish to these versatile panels—all to your exact specifications. It also describes our design and engineering services, our die shop facilities. Our fabricating plants are conveniently located and equipped to serve most industries. Write for your booklet now. Masonite Corporation, Dept. NED-11, Box 777, Chicago 90, Ill.

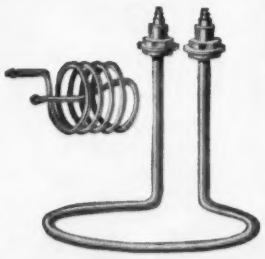
MASONITE® CORPORATION

®Masonite Corporation—manufacturer of quality panel products.

▲ For more details circle NED-378 L9 on enclosed inquiry slip ▲

HEATING ELEMENTS

Designed to *Your* Specifications



TUBULAR HEATERS for Tanks, Kettles, Baths, Extruders

STRIP HEATERS for Ovens, Dryers, Process Equipment

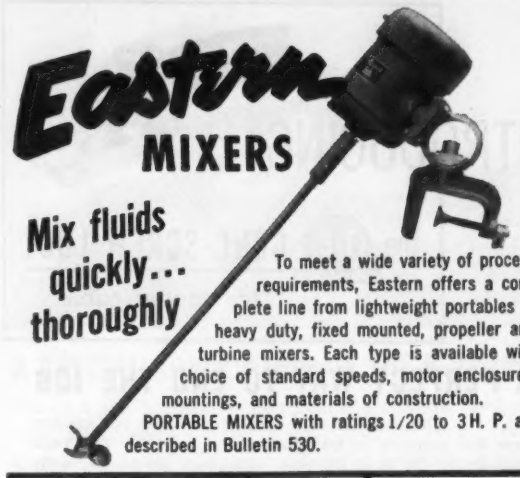
CARTRIDGE HEATERS for Dies, Molds, Platens, Defrosting

OIL & WATER IMMERSION HEATERS The Complete Line of TRENT Metal Sheathed Heating Elements Assures On-the-Spot Controlled Heat to Your Most Exacting Requirements.

WRITE FOR BULLETIN 74-TE.

TRENT INC.
Electrically Heated Industrial Equipment
251 LEVERINGTON AVE., PHILADELPHIA 27, PA.
In Canada Supreme Power Supplies Limited, Toronto 14

▲ For more details circle NED-379 L9 on enclosed inquiry slip ▲



Eastern MIXERS

Mix fluids quickly... thoroughly

To meet a wide variety of process requirements, Eastern offers a complete line from lightweight portables to heavy duty, fixed mounted, propeller and turbine mixers. Each type is available with choice of standard speeds, motor enclosures, mountings, and materials of construction. PORTABLE MIXERS with ratings 1/20 to 3 H. P. are described in Bulletin 530.

Handle the extra heavy-duty jobs in big tanks. Sizes ¼ to 30 H. P. Send for Bulletin 620.

Designed for heavy-duty applications requiring agitators from ¼ to 10 H.P. Send for Bulletin 620.

Range of ¼ to 40 H. P. solves many special mixing problems. Send for Bulletin 1210.

EASTERN INDUSTRIES, INC.
Mixer Division, Dept. N, Norwalk, Connecticut

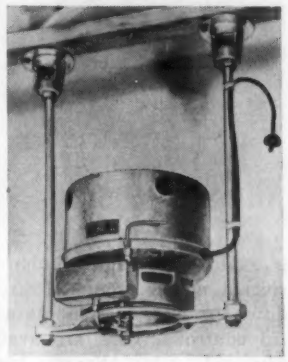
For more details circle NED-380 L9 on enclosed inquiry slip

— pressure welded to main bars to give you safe, neat, easy-to-install one-piece steel grating that lasts for years. Available in a variety of types, also in stainless, to fit your specific needs. Complete engineering data given in Catalog N-119.

ROCKWELL-STANDARD CORPORATION
GRATING DIVISION
4017 E. Seventh Ave., Gary, Indiana

For more details circle NED-381 L9 on enclosed inquiry slip

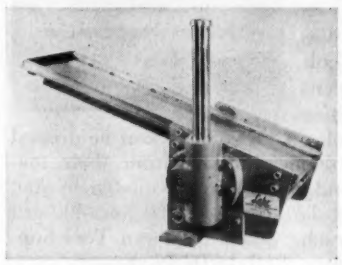
HUMIDIFIER
vaporizes 2 qt of water per hour



Centrifugal force is used to atomize 2 qt of water per hour in the Model 42A humidifier, equipped with four horizontal 1½-in. diameter vapor outlets. Attached to the 115-v, 60-cycle motor shaft are a cone and disc. Rotation causes water to travel up the cone to strike the grid vanes of the cone with great force. This breaks up the water and forms a fog-like mist. Pressure reducing valve, dirt filter, shut-off valve, copper tubing, fittings, brackets, and hanger pipes are furnished. Also offered is Model 32-W Humidostat with a 50 to 80 per cent relative humidity control range. Humidifier sells for $144 and Humidostat for $26.40. Made by **Standard Engineering Works**, 289 Roosevelt Ave., Pawtucket, R. I.

For more details circle NED-383 L9 on enclosed inquiry slip

PRESS UNLOADER
tray type has variable stroke



Parts and blanks are removed from mechanical presses by this line of tray type reciprocating unloaders. Controlled by movement of the press ram, the tray slides underneath the die during the up-stroke and receives the part or blank. During the down-stroke the tray emerges with the part which slides off the tray into a bin or onto a conveyor. Two models are available: Rack driven model in which the tray cycle is actuated by a rack mounted on the press ram; and a cable driven model which utilizes a steel cable to move the tray in and an air cylinder to move it out of the press. Change gears vary the tray stroke from 10 to 20 in. on small models with up to 36-in. trays, and 12 to 30 in. on models with up to 72-in. trays Made by **Lahr Machine & Tool Co.**, 3404 Maplewood Ave., Toledo 10, Ohio.

For more details circle NED-384 L9 on enclosed inquiry slip

Silicone Rubber

General Electric Co., Silicone Products Dept.—Handy 8-page Specification Guide CDS-188 for users of silicone rubber lists a wide variety of standard industry and military specs which cover most application requirements. It summarizes current ASTM, AMS, and military specifications, as well as those for silicone rubber mechanical goods, insulated wire and cable, and insulated fixture wire.

For more details circle NED-385 L9 on enclosed inquiry slip

IRONBOUND SKIDS

Full range of sizes, types, capacities, underclearances!

Bolted and welded construction of C-type skids feature easy deckboard replacement.

Ironbound — **IRONBOUND**
55 Hoffman Place • Hillside, N. J.

For more details circle NED-386 L9 on enclosed inquiry slip

Put this BIG SUPER *on any job!*

This new Super RS-1 is the most versatile big volume suction cleaner ever built. Special alloy fan handles the most abrasive material. Unique design handle on removable motor and fan unit makes it easy to carry the unit about for close-up blowing and limited suction cleaning. Mildew resistant filter bag is carried on transport handle. The Super dust precipitator keeps 95% of the dust in the container.

For mounting the RS-1 power unit on a 55 gallon open head steel drum a cast aluminum cover with two openings is available. With two Super RS-1 motor and fan units so mounted it is possible to use a 2 in. or 3 in. hose for massive pick-up

Ask your local Super distributor or write for complete data on this and other Super Suction Cleaners and Super service floor machines.

Other Super Features

Our own make motor standard on Super RS-1 models delivers full 1¼ HP continuously on the job. Runs cool under heaviest loads. Our own fan design gives more air volume and velocity per HP. Only Super provides push-button hose connection. Super gives you a short, sturdy transport handle permanently and securely fastened to the base. Containers of stainless steel or enameled steel. Large fixed rear wheels are standard, 4 caster base if desired.

THE NATIONAL SUPER SERVICE COMPANY
1958 N. 12TH STREET, TOLEDO 2, OHIO
In Canada: Plant Maintenance Equipment Co. Toronto, Montreal, Vancouver
SALES AND SERVICE IN PRINCIPAL CITIES

"Once Over Does It"
SUPER SUCTION SERVICE®
Power Suction Cleaners • Quality Floor Machines
SINCE 1911
"THE DRAFT HORSE OF POWER CLEANING MACHINES"

For more details circle NED-387 L9 on enclosed inquiry slip

For those who demand the finest!

Engineered with the precision of a fine Swiss watch by Scintilla, Ltd. of Switzerland, the **LESTO** is the ultimate in reciprocating electric handsaws. The number of blade strokes is scientifically set to obtain maximum efficiency in cutting wood, plastics, metal and hard-to-cut materials. A new gear makes greasing necessary only when carbon brushes are replaced. Service and parts available throughout the U. S.

LESTO
model GE/UHS - $99.50

Sole U. S. importer of
LESTO "SWISS MADE"
SAW BLADES

For further information and literature, see your dealer or write:
VICTOR J. KRIEG, INC.
Precision-made power tools of unsurpassed performance
611 BROADWAY, NEW YORK 12, N. Y.

For more details circle NED-382 L9 on enclosed inquiry slip

NEW line of STANDARD PLASTI-GROMMETS®

CUTS FASTENING COSTS

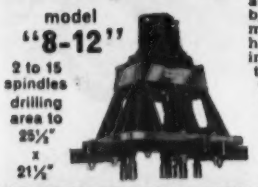
Using Fastex Plasti-Grommets to mount license plates demonstrates their use in blind applications, just one of their unique solutions to individual or mass-production fastening problems. They snap into place easily, lock tight when the screw is driven.

FASTEX

A DIVISION OF ILLINOIS TOOL WORKS
195 Algonquin Road, Des Plaines, Illinois
In Canada: SHAKEPROOF/FASTEX
Division of Canada Illinois Tools Ltd,
Don Mills, Ontario

▲ For more details circle NED-388 L9 on enclosed inquiry slip ▲

For LOW COST Hole Production Pick a MULTI-DRILL® to Fit the Job



Commander MULTI-DRILLS—adjustable multiple spindle drill press attachments—are sold and serviced by a nation-wide network of Commander Distributors—experienced, helpful specialists in solving drilling and tapping problems. Write for the name of your nearest Distributor and the complete Commander Production Tool Catalog which contains full details on every MULTI-DRILL and many other production drilling and tapping tools.

Commander MFG. CO.
4226 W. Kinzie Street • Chicago 24, Illinois

▲ For more details circle NED-389 L9 on enclosed inquiry slip ▲

FREE MARKAL PAINTSTIK!

We will send you without cost or obligation a MARKAL PAINTSTIK. They are available in various types suitable for marking on any kind of material. Hot surfaces up to 2100°F, also welding and heat treating. Cold surfaces down to —50°F, wet, dry, icy, oily, rough, smooth, acid or alkali. *MARKS Are Permanent, Fadeproof, Weatherproof.* Specify surface condition, material, temperature at time of marking.

Cold . . . down to —50°F. Hot . . . up to 2100°F.

USE THIS COUPON OR WRITE ON YOUR LETTERHEAD!

Here's what I want to mark: _____

Marking Temperature _____ Max. Temp. _____ °F.

Name _____

Company _____

Address _____

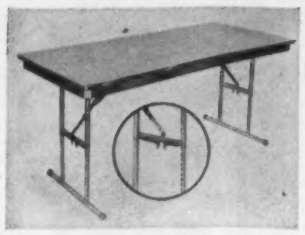
City _____ Zone _____ State _____

My Distributor's Name _____

MARKAL COMPANY
3053 West Carroll Avenue • Chicago 12, Illinois

▲ For more details circle NED-390 L9 on enclosed inquiry slip ▲

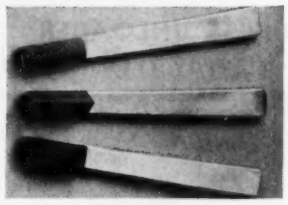
FOLDING TABLE adjusts from 30 to 40 in. high



Versatile Foldcraft folding table is adjustable in height from 30 to 40 in. Table can be used in assembly rooms, drafting rooms, laboratories, mailing rooms, and other places where workers must stand at their jobs. It is made of 18-gage tubular steel which is welded and riveted at all points of stress. Top is moved up or down in 1-in. increments with spring-operated fingertip control. Tops are available in ¾-in. unfinished plywood, 1-in. Weytex hardboard with honeycomb core, and in Weytex hardboard with added Marlite plastic surface. Made by **Foldcraft Co.**, 340 K St., Mendota, Minn.

▲ For more details circle NED-391 L9 on enclosed inquiry slip ▲

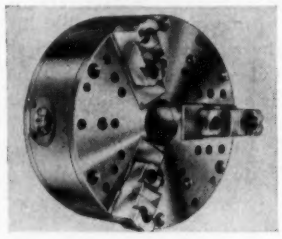
HAND LAPPING TOOLS sharpen carbide, hard steel tools



Working area of Tetrabor hand lapping tools is made from boron carbide which exceeds tool carbide and approaches diamond in hardness. Tools are designed for sharpening and lapping carbide and hardened steel tools. Cutting tools can be dressed and lapped without removing them from their machine or holder. Hand lappers are available in flat, half round, and triangular shapes in 200 and 400-grit sizes. Price is $9.80 each. Made by **Titan Tool Supply Co.**, 1419 Hertel Ave., Buffalo 16, N. Y.

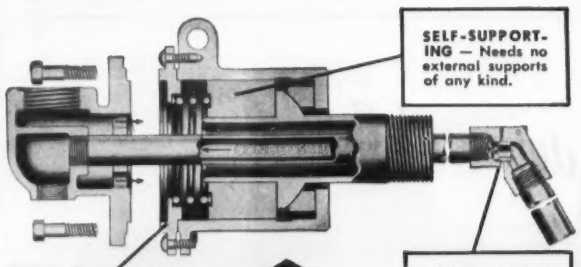
▲ For more details circle NED-392 L9 on enclosed inquiry slip ▲

WORK HOLDING CHUCK in sizes from 10 to 60 in.



This chuck combines a pinion gear plate, screw, and wedge to hold work with tremendous force. Chuck is accurate within 0.001 in. total indicator reading, and repeatability, without adjustment, is within 0.0005 in. total reading. Shear pin keeps chuck from being tightened beyond capacity, and an eccentric fail-safe mechanism locks rotation if shear pin should break. Chuck also has self-locking mechanism, center hole for bar stock chucking, sealed operating mechanism, and lube fittings. Thirteen sizes range from 10 to 60 in. Made by **Skinner Chuck Co.**, 105 Edgewood Ave., New Britain, Conn.

▲ For more details circle NED-393 L9 on enclosed inquiry slip ▲



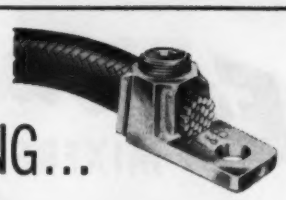
Johnson Rotary Joint with SYPHON ELBOW

Johnson Joints represent the best way industry has yet found to get steam or liquids into rotating rolls and cylinders. They are completely packless, need no lubrication or adjustment. The Type SBP shown gets steam in, condensate out, through the same head. Other types available for through flow service, in sizes to meet all operating needs. *WRITE FOR COMPLETE INFORMATION.*

The Johnson Corporation
812 Wood St., Three Rivers, Mich.

▲ For more details circle NED-394 L9 on enclosed inquiry slip ▲

INTRODUCING...



the T&B ENGINEERED CONE-SCREW LUG! for copper cable

A PERFECT WAY TO END THE JOB

This new series of connectors brings you greater ease and economy in terminating copper cable. The T&B *cone-screw lug* is a compact, one-piece connector, with extra wide cable range and exclusive non-tarnish, corrosion-proof finish. It's modern in appearance; modern in performance. Its positive wire-stop and tapered cone-screw make installation fast . . . and far more secure.

T&B *cone-screw lugs* are available to fit all popular conductor sizes, #14AWG to 500MCM. See your T&B distributor. He has the complete line in stock.

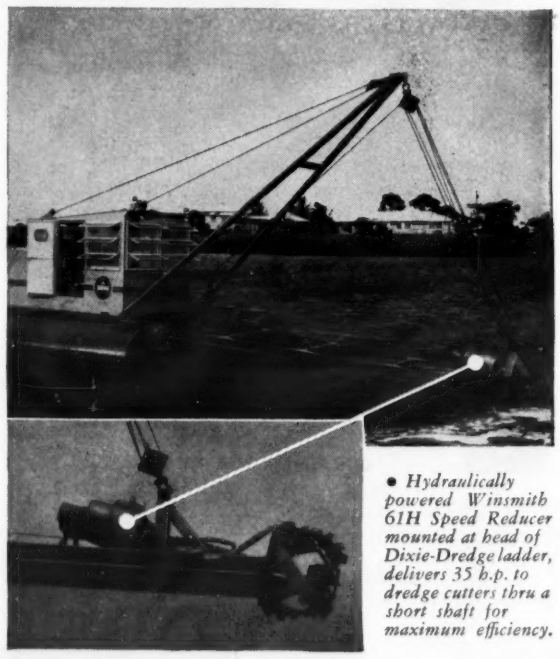
THE THOMAS & BETTS CO.
24 Butler Street, Elizabeth 1, N. J.
THOMAS & BETTS, LTD. Montreal, P. Q., Canada

EXTRA! Every standard package of T&B cone-screw lugs contains a free installing wrench . . . with plastic-cushioned handle.

▲ For more details circle NED-395 L9 on enclosed inquiry slip ▲

Winsmith speed reducers used by Dixie-Dredge

in "one of the toughest jobs ever applied!"



• *Hydraulically powered Winsmith 61H Speed Reducer mounted at head of Dixie-Dredge ladder, delivers 35 h.p. to dredge cutters thru a short shaft for maximum efficiency.*

"Winsmith Speed Reducers driving Dixie-Dredge cutters have a high shock load application and probably perform one of the toughest jobs ever applied," reports John H. Milne, president of Service Machinery Corp., North Miami, Florida, makers of this highly efficient, self-contained mobile dredging unit.

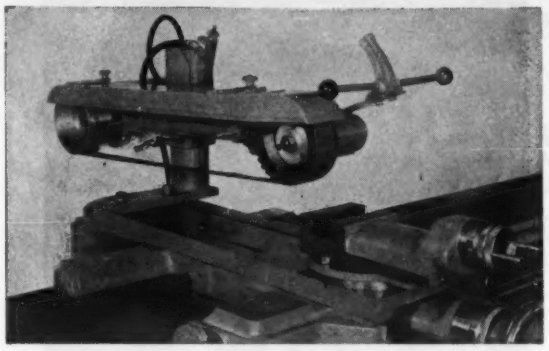
"Winsmith Reducers offer us a high torque output in a small package," says Mr. Milne. *"It operates at all angles from vertical to horizontal and has been very satisfactory in use."*

If you want satisfaction such as Service Machinery and leaders in every other industry are enjoying, check these Winsmith advantages: (1) most complete selection for every output requirement from 1/100 h.p. to 85 h.p. in ratios from 1.1:1 through 50,000:1, (2) shaft and mounting arrangements to fit your installation, (3) maximum torque designed into minimum space, (4) sound engineering and craftsmanship backed by over fifty years in the business. Write today for Catalogs 155 and SM-57. Select the "custom" reducer for your job from Winsmith Standard stock!

WINSMITH SPEED REDUCERS

WINSMITH, INC.
119 Eaton Street, Springville, (Erie County), N. Y.

▲ For more details circle NED-396 L9 on enclosed inquiry slip ▲



A SPECIAL APPLICATION OF THE 6-72 UNIT

The G & P 6-72 Abrasive Belt Unit is a machine in its own right, mounted on a stand or hung from the ceiling. But it lends itself ideally to hundreds of special applications, where it can become as handy as a third arm. Illustration shows the G & P 6-72 mounted on a lathe, courtesy Sidney Machine & Tool Co., of Sidney, Ohio. Write for informative Bulletin No. 104 and Price List.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-J WINTHROP AVENUE, INDIANAPOLIS 5, INDIANA
▲ For more details circle NED-397 L9 on enclosed inquiry slip ▲

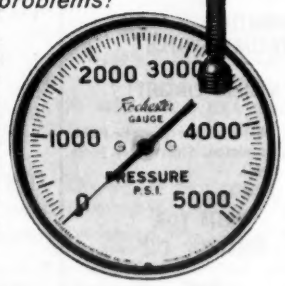
New RMC High Pressure Gauge has pointer connected directly to pressure element

★ NO LINKAGES
★ NO PIVOTS
★ NO GEARS

Eliminates friction, wear and maintenance problems!

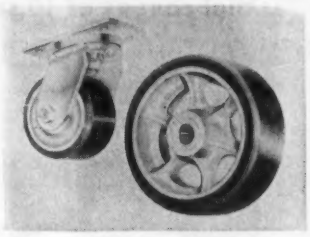
Revolutionary new multiple-turn bourdon coil makes possible direct pointer drive, without linkages, pivots or gears.

Pressure ranges from 0-1000 to 0-10,000 p.s.i. 3" and 5" dial sizes. (Also 1½" and 2" dial sizes in eccentric pivot-drive models.)



Write for complete information to:
RMC ROCHESTER MFG. CO., INC.
114 Rockwood St., Rochester 10, N. Y.
INDUSTRIAL INSTRUMENTS
▲ For more details circle NED-398 L9 on enclosed inquiry slip ▲

INDUSTRIAL WHEELS & CASTERS have polyurethane elastomer tread



Strength and capacity of steel are combined with the normal resiliency of rubber in line of Alathane industrial wheels and casters. Alathane tread material, a polyurethane elastomer, reportedly outlasts rubber as much as 5 to 1, resists permanent set under static loads, and is impervious to practically all chemicals and solvents. Wheels are offered in 6, 8, 10, and 12-in. diameters and in widths from 1½ to 3½ in. Load capacities for wheels used in manual operation range from 800 to 4100 lb. Alathane tread swivel, rigid, dual wheel, or special casters are available in the same diameters and widths, in load capacities from 550 to 8200 lb. Made by **Albion Industries, Inc.**, Albion, Mich.

▲ For more details circle NED-400 L9 on enclosed inquiry slip ▲

COMPARATOR tilts for accurate reading

Cast aluminum base with an angle support that folds out to tilt the whole unit 20 degrees upward from horizontal is a feature of the Model B-2 comparator. This enables accurate straight-on viewing of the dial indicator and eliminates the parallax error. Comparator can be used for on-the-spot checking or can be mounted on a bench for production line use. Four Em-re AGD dial indicators have 13/16-3 in., 9/16-2¾ in., ½-2⅝ in., and ⅛-2¼ in. measuring capacities. Made by **Petz-Emery, Inc.**, Pleasant Valley, N. Y.

▲ For more details circle NED-401 L9 on enclosed inquiry slip ▲

REAMING CUTTERS offered in range of sizes

Adjustment for size to 0.0002 in. while locked in the bar is a feature of Micro-Flote line of reaming cutters. They have extra-hard adjusting screws with National Fine threads, and a smooth sliding action on ground surfaces. Floating action compensates for errors in alignment. Cutters have adequate chip clearance and are made in a range of sizes. Made by **Muskegon Tool Industries, Inc.**, 11th & Western Streets, Muskegon, Mich.

▲ For more details circle NED-402 L9 on enclosed inquiry slip ▲

REPAIR FOR YOUR B&D TOOLS

Check the Yellow Pages under "Tools-Electric" for the location of the nearest Black & Decker factory service branch or authorized service station.

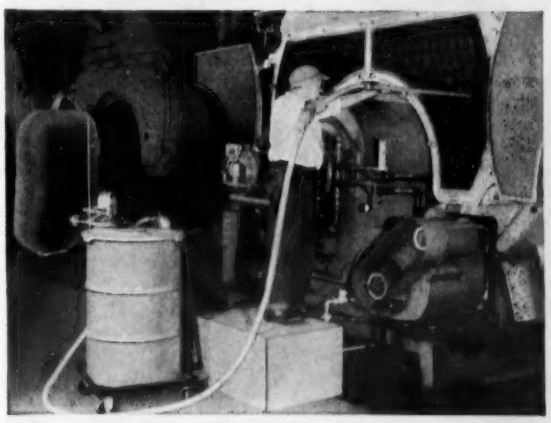
Free tool inspection when requested • Genuine B&D parts used • Factory-trained technicians • Standard B&D Guarantee at completion of recommended repairs • Fast service, reasonable cost, always.

Or write for address of nearest of more than 50 branches and service stations to: THE BLACK & DECKER MFG. CO., Dept. 1911-S, Towson 4, Md.

Black & Decker QUALITY TOOL SERVICE

▲ For more details circle NED-403 L9 on enclosed inquiry slip ▲

FACTORIES CUT FUEL BILLS WHEN BOILERS ARE CLEANED WITH TORNADO®



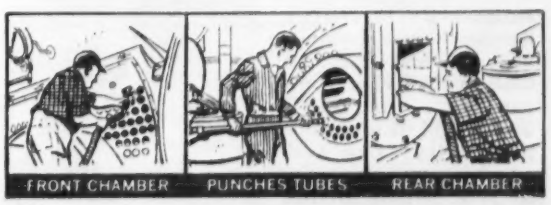
SAVINGS OF 25% UP TO 40% WITH THIS NEW METHOD OF BOILER CLEANING

Take a look at your fuel bills and imagine what it would mean if you could save 25% or up to 40% of this cost.

The new Tornado Method of Boiler Cleaning with a Tornado Jumbo Vac can mean this savings to you. What's more, boiler cleaning becomes an easy task for anyone when Tornado is on the job.

Tornado Jumbo Vacs fit right on any standard 55 gallon drum. Complete attachments and a 4 wheel dolly are available.

WRITE FOR BULLETIN 951 "TORNADO METHOD OF BOILER CLEANING"



BREUER ELECTRIC MFG. CO.
5116 N. Ravenswood Avenue, Chicago 40, Illinois
▲ For more details circle NED-404 L9 on enclosed inquiry slip ▲

LOOKING FOR POSITIVE "BURN-OUT" PROTECTION?

...use the new Cutler-Hammer DIMOR*

* DIRECT INTERNAL MONITORING OVERTEMPERATURE RELAY

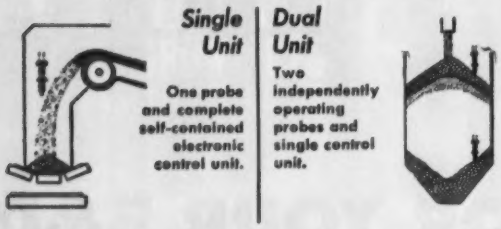
Now you can be 100% sure of precise overtemperature detection and "burn-out" protection for those electric motors, transformers, generators, reactors, machine bearings, etc. which must not fail . . . use the new Cutler-Hammer DIMOR, the ultra-accurate Direct Internal Monitoring Overtemperature Relay. Thermister sensing elements in the motor windings, for example, monitor the *actual* operating temperature from *within*, triggering the DIMOR when the critical temperature is reached. So simple . . . so sure, a Cutler-Hammer DIMOR eliminates the need for many secondary electrical and mechanical protective devices, yet costs only ⅓ as much as conventional thermocouple-electronic systems.

Fully transistorized, encapsulated, and tamper-proof; the DIMOR can be installed anywhere, in any position . . . never requires adjustment or maintenance. Other features include automatic reset with a 20°C differential between "drop-out" and "pick-up", ambient compensation and power supply regulation for maximum stability and repeat accuracy. Write for new descriptive Bulletin 13549-W251. Cutler-Hammer Inc., Milwaukee 1, Wisconsin.

CUTLER-HAMMER CONTROL CH

CUTLER-HAMMER
Cutler-Hammer Inc., Milwaukee, Wis. • *Division:* Airborne Instruments Laboratory. • *Subsidiary:* Cutler-Hammer International, C. A.
Associates: Canadian Cutler-Hammer, Ltd.; Cutler-Hammer Mexicana, S. A.; Intercontinental Electronics Corporation.
▲ For more details circle NED-399 L9 on enclosed inquiry slip ▲

ROBINTRONIC
AUTOMATIC LEVEL INDICATOR FOR BULK MATERIALS HANDLING



This accurate, easily installed electronic unit actuates an audible or visible signal to warn operators when materials vary from the pre-set level. When equipped with a power relay, it can also control the flow of materials by stopping and starting motors and other equipment.

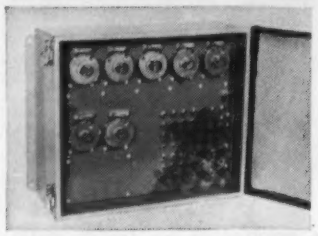
RoBINtronic requires neither adjustment nor lubrication. It is engineered for heavy industrial service and functions with materials of all densities from rock and coal to grain and sand.

Send for free Bulletin 11-14, Hewitt-Robbins, Stamford, Connecticut.

HEWITT-ROBINS

▲ For more details circle NED-405 L9 on enclosed inquiry slip ▲

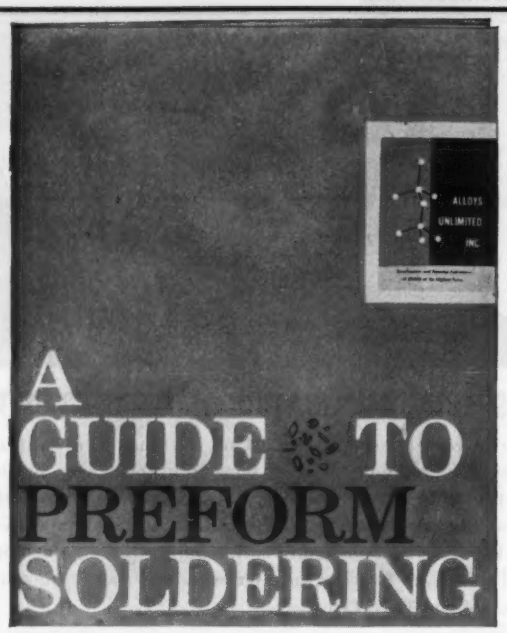
PLUGBOARD PROGRAM TIMER
has up to seven unit timers in dial ranges of 10 sec to 80 hr



High degree of flexibility in both time and sequence factors of setting-up or changing cycles is provided by Model PB-3 plugboard programmer for industrial processes. Time base is composed of up to seven unit interval timers which are compact, exchangeable plug-in units available in dial ranges from 10 sec to 80 hr. Accuracy in any given step can be held to within 1/4 to 1/2 per cent of actual interval.

Sequence of operation is established in relation to time base by inserting plugs in appropriate jacks in the plugboard. Each single plug establishes a circuit. Timers will reset themselves automatically when all installed timers complete their preadjusted cycles. An interrupter is available for processes requiring a "bumping" or gassing operation. Enclosure measures 16 x 14 x 6 in., and all working contacts are rated 10 amp at 115 v ac. Made by **Seely Instrument Co.**, 377 Fourth St., Niagara Falls, N. Y.

▲ For more details circle NED-407 L9 on enclosed inquiry slip ▲



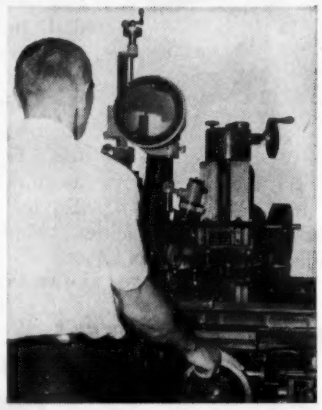
FREE! NEW 8 PAGE GUIDE

Complete information on solder preforms, their selection and use. Technical diagrams. Send for your copy today.

21-01 43rd AVENUE, LONG ISLAND CITY 1, N.Y. ALLOYS UNLIMITED INC

▲ For more details circle NED-410 L9 on enclosed inquiry slip ▲

OPTICAL PROJECTOR
attaches to various machine tools, also permits direct measurement



Continuous magnified checking, and direct measurement and comparison of work contours to transparent overlay charts are possible with this portable optical projector. It can be permanently attached to a variety of machine tools, or it can be moved from one application to another. Applications include circular and flat form tool grinding, production grinding of precision contours, locating of printed circuit points, coilwinding, and metallizing.

Accessories are interchangeable magnifications of 10, 20, and 31.25 X, mounting compounds for direct linear measurement to 0.001 or 0.0001 in., horizontal and vertical optical systems, illuminators for contour (shadow) and/or surface (reflection), power supply, and 6-in. diameter ground glass protractor screen with fresnel field lens. Made by **Stocker & Yale, Inc.**, Green Street, Marblehead, Mass.

▲ For more details circle NED-408 L9 on enclosed inquiry slip ▲

Checked 'em all . . . got
Far More for My Money
when I bought this terrific new
RIDGID® 535
Pipe & Bolt Threading Machine

Pats. Pending

Complete with
1 Universal Die Head, 2 Sets of Dies for 1/2" to 2" pipe or conduit

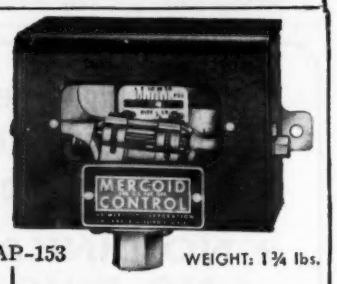
Looks good, does better. Perfect cutting, reaming, threading fast . . . and easy! Three tools operate independently . . . swing up out of the way for short pipe chucking from front. Slip-proof Speed Chuck is a great performer. Concealed oil system, automatic shut-off nozzle. Quick-opening die head sets to size right in machine. Power?. . . RIDGID-built motor handles 2" pipe, conduit, bolt, rod—and 12" geared tools easily. Try it, compare it . . . and you'll understand its enormous popularity! Leg and wheel stands available. At your Supply House.

Time-savings on just 3 large jobs more than paid the $460.00 price!

RIDGID®
The Ridge Tool Company, Elyria, Ohio, U.S.A.

▲ For more details circle NED-406 L9 on enclosed inquiry slip ▲

NEW SMALL, LIGHTWEIGHT **PRESSURE CONTROL**



AP-153 WEIGHT: 1 3/4 lbs.

FOR MEDIUMS NOT INJURIOUS TO STEEL OR SILVER SOLDER

EXTERNAL ADJUSTMENT

CALIBRATED DIAL

HERMETICALLY SEALED MERCURY SWITCH

VISIBLE CIRCUIT

CASE: NEMA 1—Heavy gauge steel, cadmium plated. Steel cover (with glass front).

WRITE FOR BULLETIN 02

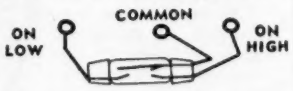
THE MERCOID CORPORATION
4201 BELMONT AVE., CHICAGO 41, ILL.

OPERATING RANGE

Adjustable Operating Range	Differential Fixed (Factory Set)	Maximum Surge Limits
1 to 20 psig	0.5 psig.	30 psig.

CIRCUIT

SP-DT HERMETICALLY SEALED MERCURY SWITCH (4A. 115V., 2A. 230V.)



Provides any of following operations:

1. *Single Pole—Cut-in high (close on rise)*
2. *Single Pole—Cut-in low (open on rise)*
3. *Single Pole—Double Throw*

▲ For more details circle NED-411 L9 on enclosed inquiry slip ▲

STOP FIRES FROM CARELESS SMOKING WITH SIPCO DUNKING STATIONS

Canister extends only 5 1/2" from mounting surface.

Thousands of businesses, Industries and Institutions have discovered that SIPCO DUNKING STATIONS not only eliminate fire hazards from smoking, but also prevent litter, thus greatly reducing cleanup time.

Heavy duty cast aluminum canisters guaranteed 3 years against breakage. Over 20 different models. Standard and Jumbo sizes. Wall models, Floor models and permanent mounting models. Grey crinkle or bright polished models. With or without message signs and decals. Special colors, signs or decals on special order.

SIPCO DUNKING STATIONS are designed to be partly filled with water. "Smokes" dropped in the large top hole are OUT FOR GOOD—NO SMOULDERING—NO ODORS—NO UNSANITARY CONDITIONS. Lift off the canister or lift out an inner-liner, dump it and the cleaning job is done.

MODEL 4J: For permanent mounting on walls, posts, columns, etc., in public areas. Eliminates pilfering problem. Bright polished JUMBO canister furnished with glass-fiber innerliner.

MODEL 1JD: Jumbo size deluxe floor model. Heavy weighted base and eye catching sign. Height 38", Wt. 26 lb. Ideal for halls, aisles, landings, etc.

MODEL M: New MIDGET SAFE SMOKER designed for use in telephone booths, elevators, toilet stalls, on benches, chairs, work tables or any location where a small "individual type" smoker is needed. Cast aluminum canister; coil spring across hinged lid safely "parks" unfinished "smokes". Available in grey crinkle or DELUXE bright polished finishes.

Model 1JD

Model 4J

MODEL M

WRITE FOR ILLUSTRATED BROCHURES

STANDARD INDUSTRIAL PRODUCTS CO.
DEPT. D • 3527 FARMINGTON RD. • PEORIA, ILLINOIS

▲ For more details circle NED-409 L9 on enclosed inquiry slip ▲

toughest* scoops and shovels *made
WOOD'S Moly BRAND

Mo-lyb-den-um alloy blades

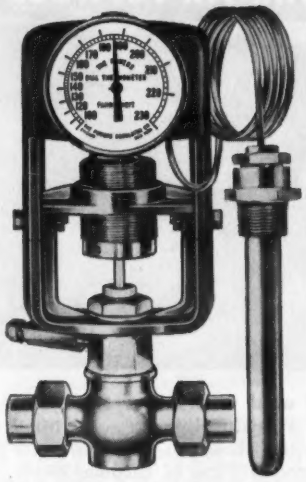
Pat. Steel I-Beam Prevents Handle Breakage

Workers like them for hang, balance, and perfect finish . . . and they last 2 to 3 times as long as other grades. Blades guaranteed uniform gauge, hardness, and tensile strength. Guaranteed not to split or crack. Guaranteed uniform quality 12 to the dozen. Cheapest shovels you can buy for long hard service, and workers take care of tools they like.

THE WOOD SHOVEL & TOOL CO.
Piqua, Ohio

▲ For more details circle NED-412 L9 on enclosed inquiry slip ▲

Hold That TEMPERATURE



at the *Right* point with a

POWERS

No. 11 Self-Operating

INDICATING REGULATOR

Simplest, Reliable Control made for processes, water heaters, heat exchangers, air compressors, etc.

BETTER CONTROL FEATURES

This versatile control has a big easy to read 4" dial thermometer. It accurately shows temperature at bulb. Better temperature control and less maintenance result from powerful bellows and minimum valve stem friction. Powers 590 — Long-Life Valve Packing and Valve Stem Lubricator with silicone grease aid easy movement of highly polished stainless steel valve stem. (e38r)

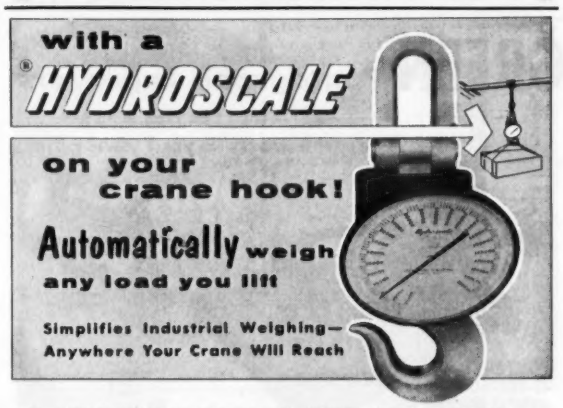
Controls Flow of Steam, Water or Gas

Write for Bulletin 329.

THE POWERS REGULATOR CO.
Dept. 1159, Skokie 44, Ill.

Over 65 Years of Automatic Temperature and Humidity Control

▲ For more details circle NED-413 L9 on enclosed inquiry slip ▲



ALL WEIGHING IS DONE ON YOUR CRANE HOOK
ENGINEERED AND BUILT FOR LONG SERVICE-LIFE
THERE ARE 110 MODELS IN THE COMPLETE LINE
TARE ADJUSTING KNOBS FOR NET LOAD READING
EASY-TO-READ DIALS AVAILABLE IN 3 SIZES

HYDROSCALES
guaranteed

They are guaranteed to be free of defects in workmanship and materials, and to be accurate to ½ of 1% of the maximum dial capacity

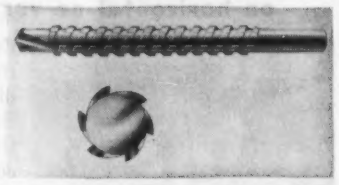
HERE ARE SOME TYPICAL WEIGHING APPLICATIONS

Just a few of the many applications include — loading, unloading, check weighing, batching, foundry charging, and protecting your equipment from overloading.

HYDROWAY SCALES, INC.
"The world's largest producer of crane scales"
31288 Stephenson Highway • Royal Oak, Michigan

▲ For more details circle NED-414 L9 on enclosed inquiry slip ▲

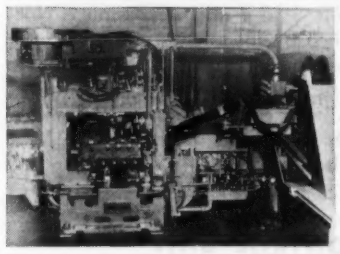
DRILL-ROUTER
for portable drill or drill press



Capable of sawing and filing rapidly in all directions, the Super Saw-Drill will rout out various shapes and enlarge holes, notches, edges, and planes. It can be used in any portable drill or drill press for working wood, plastics, plaster, plywood, Masonite, and nonferrous metals. The double fluted, self-cleaning tool has six rows of cutting teeth. A negative rake angle provides clean, fast cutting action in all directions. Tool has a sharp drill point to make its own starting hole. Price is $1.25. Made by **Durabilt Metal Products Co.**, 709 Sip St., Union City, N. J.

▲ For more details circle NED-416 L9 on enclosed inquiry slip ▲

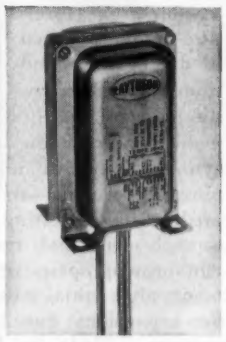
BOWL FEEDERS
feed, orient parts for assembly



Either aluminum or fabricated steel bowls are available on line of bowl feeders which feed, orient, and convey parts to assembly machines. Model BF 24-in. vibrating bowl feeder and sorting unit, shown upper left in picture, feeds and orients 2⅝ in. long keys to an automotive assembly machine. Sorting unit inspects the key for both undersize and oversize. Feeder is operating in conjunction with Model SF-5 hopper feeder, shown lower right. This unit carries timing gears up over the top of the elevator and into the orienting unit at a controlled rate. Bowl feeders are made by **Campbell Machines Co.**, 18634 Fitzpatrick, Detroit 28, Mich.

▲ For more details circle NED-417 L9 on enclosed inquiry slip ▲

TRANSFORMER
regulating plate-filament type



Economic regulation of electronic power supplies is provided by this voltage regulating plate-filament transformer. It performs the same functions as a conventional transformer while maintaining voltage within ±3 per cent of the rated output with line variations from 100 to 130 v, 60 cycles ac. By regulating voltages for both plates and filaments, the transformer prolongs tube life. Three stocked models cover most power supply needs. Made by **Raytheon Co.**, Industrial Apparatus Div., Manchester, N. H.

▲ For more details circle NED-418 L9 on enclosed inquiry slip ▲

ONE RESPIRATOR STOPS ALL HAZARDS!

ALL DUSTS*
RADIOACTIVE DUSTS
MISTS* LIGHT SMOKE
ORGANIC VAPORS AND ALL DUSTS*
PAINT SPRAY ORGANIC VAPORS*
AMMONIA FUMES ACID GASES
INSECTICIDES†

C-200 Series Respirator by **Pulmosan**

- Single filter retainer cup
- Interchangeable filters
- New molded plastic clip-cap permits cartridges and pre-filters to be replaced independently
- Lightweight, easy to wear

*Approved by U.S. BUREAU OF MINES

†Accepted by U.S. BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Write for details:

PULMOSAN STOPS Accidents

Pulmosan SAFETY EQUIPMENT CORPORATION
644 Pacific Street, Brooklyn 17, N.Y., STerling 9-0200
1007 Washington Ave., St. Louis, Mo., CHestnut 1-9393

▲ For more details circle NED-419 L9 on enclosed inquiry slip ▲

It's easy to bend a wide variety of material when you know how—profitable too because bending can simplify product design—make one curved piece do the job of two or more. Bending can improve product appearance and lower your production costs!

This 32-page illustrated manual shows how to make center eye and off center bends, circles, zero radius bends, scrolls, squares, springs and coils, loops and spirals—all with *one versatile machine.* Booklet also tells how to tool for tubular, channel, angles and other special bending needs.

Consult the Yellow Pages of your phone book under Machinery, Machine Tools for the name of your Di-Acro distributor or write us for Quick facts folder describing this and other Di-Acro machines.

Find Us Fast In The Yellow Pages

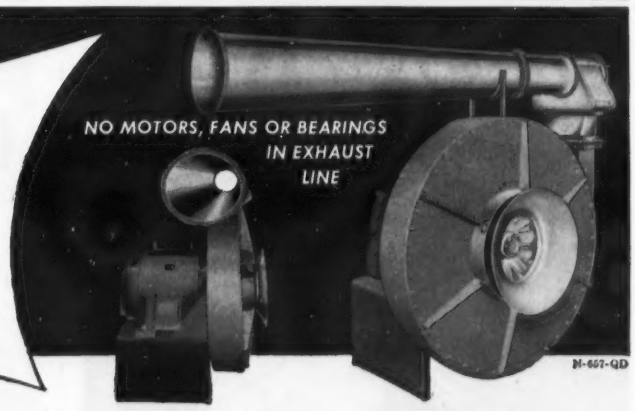
di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MFG. CO.
354 8th Avenue, Lake City, Minnesota

▲ For more details circle NED-420 L9 on enclosed inquiry slip ▲

Now...

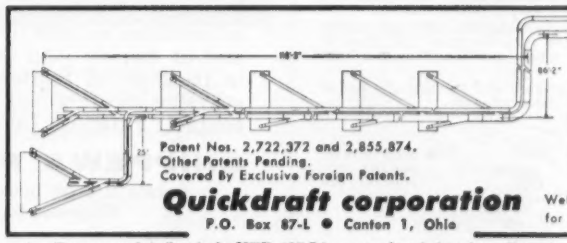
you can reduce bulk materials handling costs with ***Quickdraft*** high pressure exhausters



FOR MOVING:
Cement, Sand, Iron Oxide, Wheat, Corn, Salt, Limestone, Castor Beans, Knots, Blocks, Paper, Wool, Cotton, Oats, Rags, Rubber, Vegetables, Coal (Powdered), Shavings, Cork, Sawdust . . . **and any other materials that can be moved by air!**

IMPORTANT NOTICE
For resisting abrasive action, Quickdraft units can be rubber lined. For withstanding corrosive gases, all Quickdraft units are available in standard acid resisting vitreous enamel, No. 316 Stainless Steel, rigid plastics (PVC), and with plastic and Fiberglas coatings.

Time and maintenance savings usually pay for Quickdraft high-pressure exhausters in 6 to 18 months on materials handling jobs. Because material does not pass through blower, maintenance is negligible. Downtime for cleaning and replacing fans, motors and bearings is eliminated. Quickdraft units are also ideal for exhausting paint spray, abrasives, corrosive gases, noxious fumes and high temperatures. For Quickdraft engineering data on materials handling, industrial exhausting, heating plant venting, write today!



Patent Nos. 2,722,372 and 2,855,874.
Other Patents Pending.
Covered By Exclusive Foreign Patents.

TYPICAL EXAMPLE: Ideal for moving trim from paper, cellophane and plastic slitting machines. (Models range from 4 in. to 30 in. diameter — with 1/6 to 600 H.P. motors — with negative static pressures from 1/4 in. to 60 in. W.G.)

Quickdraft corporation
P.O. Box 87-L • Canton 1, Ohio

Well known for power draft units for all types of heating plants.

▲ For more details circle NED-415 L9 on enclosed inquiry slip ▲

CLOSE TOLERANCES—Tolerances are identical with those that will be found on standard production parts.
FAST SERVICE—Usually it will take only hours from the time the order is received to produce twelve prototype parts using PROTOTYPES by KOTOKAST.
ECONOMY—This is the most economical method of producing prototype parts there is.
NO LIMITATION—PROTOTYPES by KOTOKAST has been successfully applied to a wide variety of designs ranging from a simple washer to intricate molded parts.

FOR MORE INFORMATION ON PROTOTYPES by KOTOKAST . . .

WRITE DEPARTMENT 645 3630 WOODDALE AVENUE MINNEAPOLIS 16, MINNESOTA

For more details circle NED-421 L9 on enclosed inquiry slip

WE USE LABELON TO MARK STORAGE AND STOCK BINS, TAG TOOLS, INDICATE REPAIRS AND SERVICE WORK

WON'T SMUDGE • RESISTS: DIRT GREASE WATER ACIDS

LABELON PLASTIC Write on it TAPE

STICKS WITHOUT MOISTENING

LABELON'S PERFECT FOR OFFICE FILES, FOLDERS AND DRAWERS . . . AND THEY SWEAR BY IT IN THE LABORATORY

For samples and prices, see your nearest dealer or write Dept. NED-11

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

For more details circle NED-422 L9 on enclosed inquiry slip

- Peak capacities from both new and old machines! Lipe equipped automatics meet and beat competition by delivering 90% of gross geared capacity. Continuous feeding of stock of practically every length, shape and material in close-tolerance feedouts.
- Eliminates time and energy consuming hand-loading to free operators for finer work on quality . . . machine set-ups . . . care of tools. Get full information. Write or phone today.

Lipe-ROLLWAY

PIONEERS IN PNEUMATIC BAR-FEEDING

For more details circle NED-423 L9 on enclosed inquiry slip

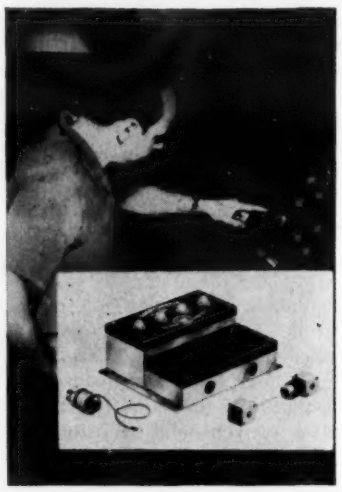
CORE DRILLING MACHINE anchored in position by vacuum on horizontal or vertical surface

Reversible vacuum unit that develops 2000 lb of holding power in three vacuum pads at the base of the center column secures the Vacuum 120-VE diamond core drilling machine in working position. It can be anchored on smooth, porous, and irregular surfaces for both horizontal and vertical drilling operations. Machine can be set up by one man in 1 min. Synchronized water solenoid valve and drill motor switch allow water to flow only during drilling.

Drill penetration from 1 to 4 ipm is possible. Normal vibration is absorbed by the vacuum pads and not transmitted to the drill itself. The 150-lb machine operates on 110-v ac-dc and uses thin wall diamond bits for 1/4 to 14-in. diameter cores. Made by **Portomag, Inc.**, Diamond Core & Saw Div., 1521 E. Nine Mile Rd., Ferndale 20, Mich.

For more details circle NED-424 L9 on enclosed inquiry slip

ELECTRONIC CONTROL UNIT stops injection molder malfunction



Self - adjusting Circuit - Master Automold electronic control unit automatically stops an injection molding machine from applying clamping pressure when dies are not closing properly. Unit receives information from a pressure sensor fastened to die cylinder and from a position sensor mounted on the mold. When die cylinder hydraulic pressure exceeds a predetermined setting because of some malfunction, control stops and reverses the die piston's forward motion and opens the mold. It requires no adjustments after initial setup and automatically compensates for expansions due to temperature and mechanical changes. Made by **Wintriss, Inc.**, 20 Vandam St., New York 13, N. Y.

For more details circle NED-425 L9 on enclosed inquiry slip

for Low Pilot Pressure Actuation

Versa Diaphragm Valves can be actuated by pilot (or signal) pressures as low as 5 PSI on double diaphragm types and as low as 10 PSI on standard spring return models.

Versa Diaphragm Valves are available with side port bodies or for manifold mounting, and in sizes from 1/8" thru 1" NPT in 2-, 3-, 4-, and 5-way types, and for pressures from partial vacuum to 500 PSIG.

All Versa Valves are triple pressure and functionally tested under water for guaranteed leakproofness.

VERSA

Write Today for your free copy of bulletin 259

VERSA PRODUCTS COMPANY INC.
249-A SCHOLES STREET
BROOKLYN 6, N. Y.

For more details circle NED-426 L9 on enclosed inquiry slip

CUT COSTS with FIR PLYWOOD

Overlaid plywood acid tanks cost $50 less, last longer than 2" t&g lumber. Plywood lithographic etching tanks like these have been used for over 5 years at 20th Century Press of Tacoma, Washington—and are expected to last another fifteen. The tanks are lighter, stronger, easier to make—and most important, leakproof. The plastic-like high density phenolic resin overlay is fused to the panel during manufacture. It is hard, waterproof and highly acid resistant. No finish is required.

Only plywood with DFPA grade-trademarks is made and tested under industry-wide Douglas Fir Plywood Association quality control program. Look for letters DFPA on the panel.

Write for New File Folder Catalog

DOUGLAS FIR PLYWOOD ASSOC., DEPT. 181, TACOMA 2, WASH.

For more details circle NED-427 L9 on enclosed inquiry slip

GREEN *Pantograph Engravers*

ELIMINATE DELAYS!
Keep the work in your own plant.

PORTABLE 40-POUND BENCH-MODEL 106

Famous 2 or 3-dimensional engraver, successfully used by thousands, features 5 positive, accurate pantograph ratios. Versatile ball bearing spindle has three speeds up to 14,000 rpm; height of pantograph and position of cutter are continuously adjustable; one copy carrier (supplied) accepts all standard master type sizes.

The Model 106 has proven incomparable for speed and accuracy . . . yet reasonably priced.

Cutter grinders, rotary tables, master letters, compound slides, name plates and all required accessories. For complete information, write to

MODEL D2 HEAVY-DUTY 2-DIMENSIONAL

- 575 pounds—rigid, sturdy, precise
- Vertical adjustment of copy table and frame with Pantograph
- Unobstructed on three sides to take large work
- Micrometer adjustment for depth of cut
- Ball-bearing construction throughout super-precision ball bearing spindle
- Spindle speeds up to 26,000 rpm for engraving or machining modern materials
- Ratios 2 to 1 to infinity master copy area 26" x 12"
- Vertical capacity over 16"

GREEN INSTRUMENT COMPANY, INC.
375 PUTNAM AVENUE, CAMBRIDGE 39, MASS.

For more details circle NED-428 L9 on enclosed inquiry slip

Protect your products from chipping and scratching, . . . from dirt, moisture and fumes . . . with

CHIPPEWA FAIRLON*

POLYETHYLENE PACKAGING

Write for complete, free information

Polyethylene film has proved the most versatile of modern packaging materials, combining unequalled economy, range of application and product characteristics. Such characteristics as clarity, strength, printability, uniformity, and ease of handling are built into polyethylene film in the Chippewa process. Chippewa Plastics took an early lead in research, technical know-how and development of equipment for quality-controlled mass production of polyethylene films, sold under the name Fairlon.* For samples and complete information on how to protect and/or display your products in packages of Fairlon* polyethylene sheeting and tubing, contact: FAIRLON, Dept. 303

The mark of leadership

CHIPPEWA PLASTICS CO.
Division of Rexall Drug and Chemical Company
Chippewa Falls, Wisconsin

*Trademark Reg.

For more details circle NED-429 L9 on enclosed inquiry slip

Mark in color on any surface

felt tip

CADO-MARKER

The finest inexpensive industrial marker your money can buy!

Factory-filled with oil-based ink in choice of eight colors. Instant-dry – Waterproof – Permanent – Transparent

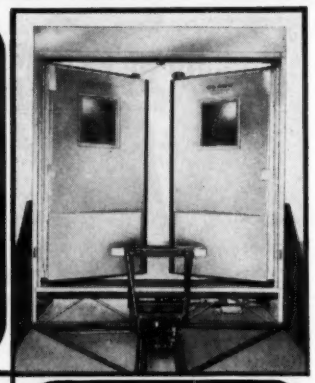
At stationers and marking equipment suppliers everywhere. For complete information, write to Dept. NED-11

CUSHMAN & DENISON
Manufacturing Company • Carlstadt, New Jersey

Refills available

▲ For more details circle NED-430 L9 on enclosed inquiry slip ▲

NEW CLARK **SHOCK ABSORBER DOOR** Takes Tough Treatment



The BUMPER takes the Shock... NOT the Door

Visitors to the Materials Handling Show in Cleveland watched in open admiration as an air-powered ramrod pounded the Clark Shock Absorber Door open with trip-hammer regularity.

20 times per minute, 6 hours per day for the duration of the Show, the door was banged open, returning every time to tight, accurate closure.

This graphic demonstration proves the Shock Absorber Door **outlasts any contact door on the** market without wear, tear or repair. Exclusive URETHANE-Filled Bumper takes the shock. Flexibly suspended hinges let the door "ride with the punch." Neoprene seals eliminate drafts. Spring Return is guaranteed.

If you want to keep traffic **moving,** write for the full story on this low-cost, easily installed door. Widths: 6′ to 8′. Heights: 7′ to 10′. Please specify size of opening.

CLARK DOOR COMPANY, INC. *since 1878*
511 Hunterdon St., Newark 8, N. J.

▲ For more details circle NED-431 L9 on enclosed inquiry slip ▲

OPTICAL COMPARATOR for inspecting small parts

Convenient placement of stage and screen of the Model C Wilder small parts comparator makes possible rapid inspection of mass produced parts. The optical instrument is furnished with its basic equipment only. Variety of magnifications, measuring stages, and master gage charts are available to order for the type or size of parts to be inspected. Illustrated comparator has a special 2 x 4-in. range measuring stage with window reading micrometers calibrated in 0.0001 in. Made by **Opto-Metric Tools Inc.,** 137 Varick St., New York 13, N. Y.

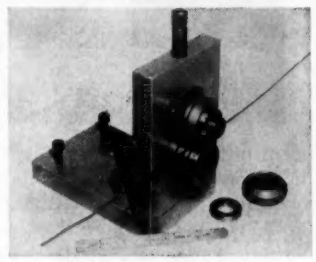
▲ For more details circle NED-433 L9 on enclosed inquiry slip ▲

PVC PLASTIC NOZZLES in 2 to 70 gpm flow rates

Nonclogging, long-wearing plastic nozzles are made from one-piece polyvinyl chloride in a spiral design. Used wherever nonmetallic, corrosion-proof nozzles are required, the PV Series comprises 28 models with wide or narrow spray angles, full or holllow cone. Seven flow rates range from 2 to 70 gpm. Prices are from $1.90 to $4.90 each. Made by **Bete Fog Nozzle, Inc.,** 309 Wells St., Greenfield, Mass.

▲ For more details circle NED-434 L9 on enclosed inquiry slip ▲

WIRE MARKER stamps trade names, code numbers



Set up between a wire drawing stand and take-up reel, the Hoffmann wire marker will code wire of various gages at any desired interval. It consists of a changeable roller bearing die containing engraved code numbers, serial numbers, or trade marks, and an adjustable idler roller containing the grooves to accommodate and guide the different wire sizes. Designed for continuous operation, the marker is available in sizes for marking a variety of ferrous and nonferrous wires of any gage. Marker shown is for 1/16 and 3/32-in. diameter silver soldering wire. Made by **Quality Die Co.,** 3065 E. 93rd St., Chicago 17, Ill.

▲ For more details circle NED-435 L9 on enclosed inquiry slip ▲

HILD

TRANSFERABLE HEAD VACUUMS

Speed-up maintenance with Hild transferable head vacuums — ideal for all types of heavy volume or bulk vacuuming, including furnace, flue, and air conditioning duct cleaning. Powerful 1½ h.p. motor fits any 10, 15, 30, or 55 gallon drum — transfers from drum to drum in seconds for quick cleaning and water removal. Motors can be converted to blower or "Strap-Bak-Vac" for vacuuming in hard to reach areas.

Model 455
55 Gal. Vacuum
1 h.p

Model 655
55 Gal. Vacuum
2-2/3 h.p.

HILD FLOOR MACHINE COMPANY
1217 Washington Blvd. • Chicago 7, Ill.

Write today for complete information.

Ned-119

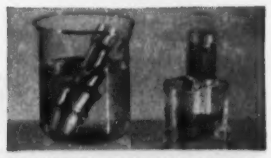
▲ For more details circle NED-436 L9 on enclosed inquiry slip ▲

see how CaPlugs can protect your products

(IN PROCESS, TRANSIT AND STORAGE)

test this FREE assortment*

SEE HOW EASY THEY SLIP ON...AND OFF! Made of tough, flexible Polyethylene, tapered (non-threaded) CaPlugs can be used as caps or plugs, inside or outside of threaded or plain fittings. Threaded styles are knurled to spin on or off with ease. Costing less to buy, they cost less to apply.



SEE HOW THEY WITHSTAND ACIDS, SOLVENTS, HEAT AND COLD... and keep out dust and moisture, too. Dunk a CaPlugged product in any solution. CaPlugs are impervious to most common chemical reagents, acids and solvents...withstand temperatures from −94°F. up to 175°F.

SEE HOW TOUGH THEY ARE. For proof, drop a product on its CaPlug...tap it with a mallet...or make a trial shipment of parts with CaPlugs applied. You'll find that these versatile closures provide "kid-glove" protection and will not collapse, chip, break or shred under the most severe of conditions.

***YOU'RE INVITED TO TEST Ca Plugs** in any way you choose. Ten different styles are promptly available in over 500 stock sizes. The coupon below will bring you a random assortment plus illustrated literature. Additional samples in specific sizes for testing are also yours for the asking (details in literature).

MAIL THIS COUPON FOR FREE SAMPLES

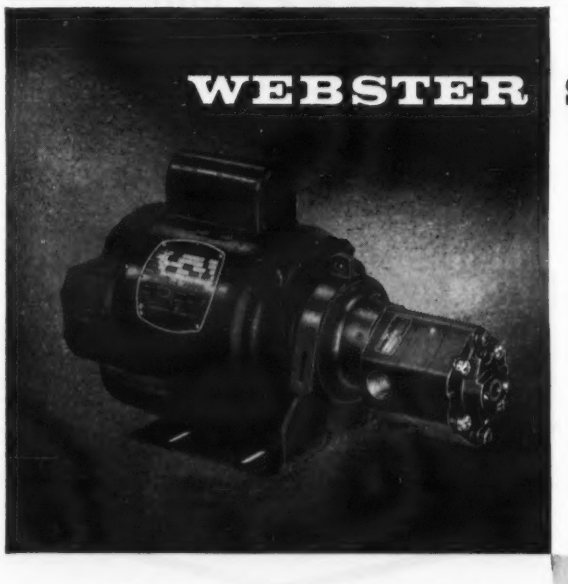
CAPLUGS DIVISION
PROTECTIVE CLOSURES CO., INC.
2209 Elmwood Ave., Buffalo 23, N. Y.

RUSH free assortment of CaPlugs, literature and prices to us.

NAME _____ TITLE _____
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

▲ For more details circle NED-437 L9 on enclosed inquiry slip ▲

WEBSTER SUPPLY PUMPS



Capacities to 575 GPH

This is the way to handle all furnace oils, especially heavy no. 5 and 6 grades — with an extra measure of dependability required for commercial and industrial applications. Webster supply pumps are motor equipped, provide a range of capacities from 15 GPH to 575 GPH. Heavy oil models have extra large ports to transfer initially cold, heavy oils without restriction.

Webster pumps are compact, easy to install. Require less plumbing. Engineering bulletins give complete specifications and mounting dimensions.

call the man from Webster

MODEL 23118 fills the need for a lightweight, portable pump and motor combination. Transfers fuel oil, kerosene or other lubricating liquids. Mounted on wood base, with carrying handle and 25-foot cord.

HEATING DIVISION
WEBSTER ELECTRIC
RACINE · WIS.
our 50th year

Franklin ads. A-122

▲ For more details circle NED-432 L9 on enclosed inquiry slip ▲

Compress 8 barrels of trashpaper into one... E-Z BALER!

Eliminate the dangerous, unsanitary, unsightly clutter of loose trashpaper with the new, improved E-Z BALER. Occupies only 24" of floor space. Very inexpensive. Ideal for factories, motels, hotels, offices, schools, hospitals, stores, apartments, etc.

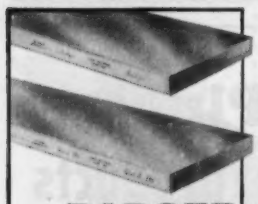
GET THESE BIG E-Z BALER ADVANTAGES
- REDUCE FIRE HAZARD
- AVOID UNSANITARY TRASH CONDITIONS
- REDUCE TRASH DISPOSAL COSTS
- SAVE FLOOR SPACE

THE E-Z BALER IS EXTREMELY EASY TO OPERATE Lid swings open and trash paper is thrown in. Crank handle forces lid down through container, pressing trash to bottom of baler. Compressed trash is then wired and removed.

Write for descriptive literature

VERNON TOOL CO., LTD.
1101 MERIDIAN AVENUE • ALHAMBRA, CALIFORNIA

For more details circle NED-439 L9 on enclosed inquiry slip



Your need demanded it!

OVERSIZE
Flat Ground Die Stock

BADGER (Oil Hardening O-1 Type)
OVERSIZE: .014" to .016" on ¼" thickness and above. *Std. Tolerances—1¾" thickness and under.*

SELECT B FM (Air Hardening A-2 Type)
OVERSIZE: .010" to .012" on thickness

MADE BY LATROBE *Metalmasters...*

to cut your die costs!

Latrobe's OVERSIZE Flat Ground Die Stock permits die design and layout to nominal dimensions—with "extra thousandths" for grinding to nominal size after heat treatment.

Over 750 Sizes of Badger and 125 Sizes of Select B FM available through Latrobe Branch Offices & Distributors.

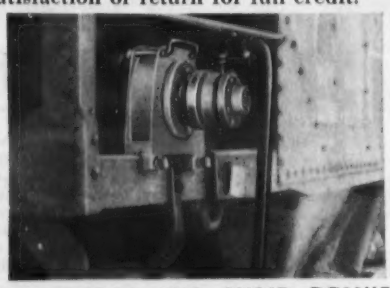
Send today for Bulletin P-8-9-243

LATROBE STEEL COMPANY
MAIN OFFICE and PLANT: LATROBE, PA.
BRANCH OFFICES and WAREHOUSES: BOSTON • BUFFALO • CHICAGO CLEVELAND • DAYTON • DETROIT • HARTFORD • INDIANAPOLIS LOS ANGELES • MIAMI • MILWAUKEE • NEW YORK • PHILADELPHIA PITTSBURGH • TOLEDO • SAN LEANDRO

For more details circle NED-440 L9 on enclosed inquiry slip

VIBROLATOR®
CCVP 3000 HOPPER CAR SHAKER

must unload hopper cars to your complete satisfaction or return for full credit.



REDUCE LABOR AND AVOID DEMURRAGE

Light weight for complete portability (72 lbs.), the CCVP 3000 is guaranteed to exceed the performance of any size portable hopper car shaker. Equipped with simple quick attach integral mount and convenient carrying handle, one man can quickly and easily do all your hopper car unloading operations. Also used for materials movement from massive bins, hoppers, chutes and screens.

VIBROLATOR is Martin's reg. trade mark for its vibration inducers and vibrator accessories—available in many sizes, "pocket watch" to most powerful portable unit built. WRITE FOR LITERATURE GIVING COMPLETE SPECIFICATIONS and APPLICATION DETAILS.

MARTIN ENGINEERING COMPANY
155 Nedlow St. Neponset, Illinois

For more details circle NED-441 L9 on enclosed inquiry slip

CONVEYOR CURVE
mesh belt woven to curve radius assures level conveying surface

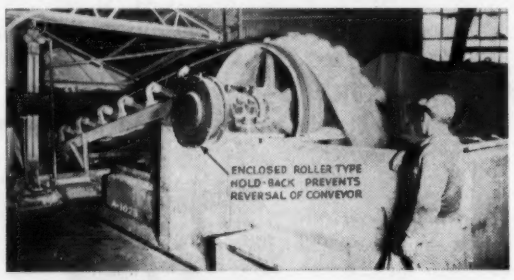
Wire mesh belt of the Taperweave Curve Conveyor is woven to a taper corresponding to the inner and outer radii of the curve. This achieves a flat, level conveying surface and minimizes wear on metal belt. Dual multiplane side chains carry crossbars which extend through the woven metal mesh belt to provide positive drive. Load is supported by full-width slider bed or skin rails. Adjustable tubular steel legs, and adjustable take-ups and drive systems are featured.

Unit moves up to 2000-lb loads at speeds to 200 fpm. Belt widths are variable. The 180-degree unit pictured has 36-in. wide belt traveling on a 5-ft 9-in. center line radius. Other 90-degree units with 20-in. belt width and 4-ft 6-in. centerline radius can be produced. Prices range from $2000 to $5000. Made by **Wiretyer Corp.**, 65 Leliarts Lane, East Paterson, N. J.

For more details circle NED-442 L9 on enclosed inquiry slip

CONVEYOR-ELEVATOR HOLDBACK
offered in two types to prevent loads from traveling backward

Personnel and equipment are protected from dangerous reversal of bucket elevators and inclined conveyors by two types of holdbacks. Standard roller type holdback

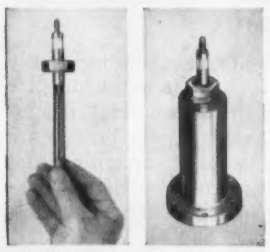


is installed on the head shaft so that equipment can be stopped at any time without backward motion. It operates on the roller wedge principle and is available in 1 7/16 to 8-in. bore sizes.

Second type is a totally enclosed holdback with cast steel housing, hardened wedge block, and hardened steel rollers. It releases freely and quickly when forward travel is resumed. Enclosed design prevents entry of dust, dirt, and foreign matter. Mounting can be in any convenient position on head or counter shaft. Bore sizes from 2 7/16 to 12 in. are offered. Made by **Stephens-Adamson Mfg. Co.**, 12 Ridgeway Ave., Aurora, Ill.

For more details circle NED-443 L9 on enclosed inquiry slip

NEW LOW COST GETTERING VACUUM PUMP



Cartridge only $135 — Complete assembly including metal gaskets $215

- For use in ultra-high vacuum or continuously pumped closed systems.
- Pumps through chemical action — no fluids to contaminate system.
- Operating range 10^{-1} - 10^{-9}mm. Hg. Speed approx. 5 l/s.
- No backing pump or expensive power supply needed.

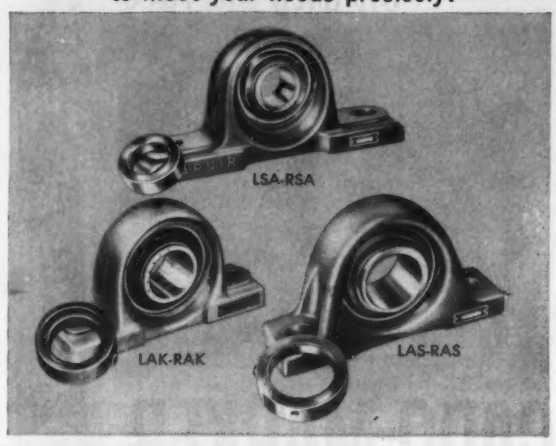
Gases are removed by chemical reaction with titanium film which is intermittently deposited by low voltage filament.

Available either as a cartridge for mounting directly in vacuum chamber, or with stainless steel housing where deposits of titanium are objectionable or for external mounting. Write today for technical details on NRC Model 2202-02 Titanium Adsorber Pump.

NRC EQUIPMENT CORPORATION
A subsidiary of National Research Corporation
Dept. 29-K, 160 Charlemont St., Newton 61, Massachusetts • DEcatur 2-5800

For more details circle NED-444 L9 on enclosed inquiry slip

Standard duty...different sized housings... to meet your needs precisely!



FAFNIR BALL BEARING PILLOW BLOCKS

New, wider size range now makes it possible for you to equip with Fafnir Ball Bearing Pillow Blocks when you need bearing replacements.

For example, the three shown here are all standard duty but built to different housing dimensions to meet various requirements. All feature the Fafnir wide inner ring ball bearing with self-locking collar for easy installation.

You have a choice of contact-type Plya-Seals (R-Series), or slinger-type Mechani-Seals (L-Series), for higher speeds. See your Fafnir Distributor. Or write for information to The Fafnir Bearing Company, New Britain, Conn.

FAFNIR BALL BEARINGS

For more details circle NED-445 L9 on enclosed inquiry slip

NEW WAY OF STAMPING HEX PLUGS or around circumference of SLEEVES

As handle is turned, gear arrangement moves roller die across part being marked. Fixture uses cradle for sleeves and special table for hexes. Write for Bulletin 646.

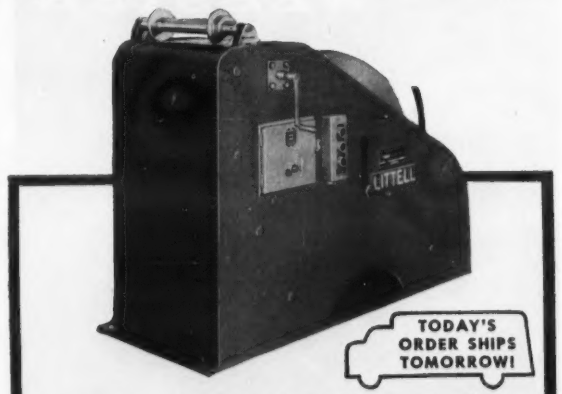
Mecco SAFETY **G·R·D** STYLE B MARKING FIXTURE

A product of the Marking Device Industry

M. E. CUNNINGHAM CO.
1055 CHATEAU STREET, PITTSBURGH 33, PA.

For more details circle NED-446 L9 on enclosed inquiry slip

LITTELL COIL CRADLES
Plain and Motor Driven — 1 and 2-ton capacities



TODAY'S ORDER SHIPS TOMORROW!

COIL CAPACITIES: 2,000 to 4,000 pound coils; 8" to 24" maximum widths; 45" maximum O.D.

Standard motor driven Littell coil cradles feed 600 inches of stock per minute. Also built with Variable Speed Drives for infinite feed range of 100" to 600" per minute.

F. J. LITTELL MACHINE CO.
SERVING USERS OF COIL STOCK — Branches: Detroit Cleveland

Write for Catalog "B"

4169 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

For more details circle NED-447 L9 on enclosed inquiry slip

READ any surface temperature with Alnor® PYROCON

Equipment...material...metallic or non-metallic...flat, curved... revolving or stationary—you can read every surface temperature accurately in less than 3 seconds!

Compact, complete in precision design, this rugged instrument assures highest standards of speed, accuracy and dependability.

Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 529, 420 N. LaSalle St., Chicago 10, Ill.

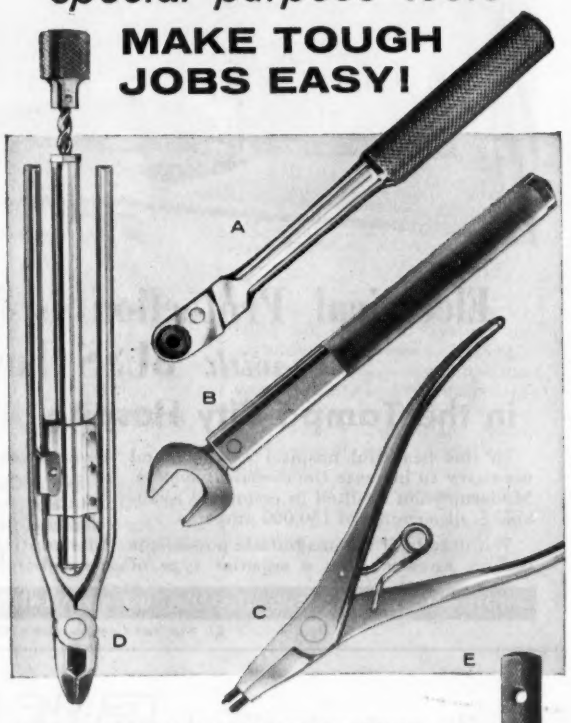
Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

▲ For more details circle NED-448 L9 on enclosed inquiry slip ▲

MILBAR

special purpose tools

MAKE TOUGH JOBS EASY!



A. MILBAR CLOSE-CLEARANCE RATCHET WRENCH for tightening or removing twelve-point or hex-head screws and nuts. Fits in the tight spots where regular wrenches won't work. Smooth ratchet action. Several sizes available. Widely used in aircraft and missile industries.

B. MILBAR SNAP TORQUE TOOL—with pre-set torque. A "click" you can feel and hear tells when proper torque is reached. A choice of head types for specific jobs. Widely used on production lines in the automotive and aircraft industries.

C. MILBAR SNAP RING TOOL—the original and most widely used tool with replaceable points of different shapes and sizes. Tool lasts forever—just change points for the job at hand or when they wear out. Special points for holeless snap rings.

D. MILBAR WIRE TWISTER—for smooth, automatic one-hand operation. Extra large serrated jaws assure a longer life and non-slip grip. Spring return and squeeze release eliminates need for shifting hands. Twists and cuts wires with no waste motion.

E. MILBAR GEARED RIGHT-ANGLE TOOL—for easy access to "tight" spots. Fits all standard 3/8" drive extensions, sockets and ratchets. Reaches around corners and delivers increased torque for tightening or removal. Eliminates unnecessary removal of parts to get at the job to be done. Fully proven and tested by thousands of users.

Send for your free brochure describing these, and other, MILBAR Special Purpose Hand Tools. MILBAR has the engineering facilities and personnel to solve your special problems where sufficient volume is involved.

MILBAR CORPORATION
1900 EUCLID AVENUE • CLEVELAND 15, OHIO

▲ For more details circle NED-449 L9 on enclosed inquiry slip ▲

QUICK-ACTION CLAMP for electric, hydraulic, air lines

Easily opened and closed TA5000 Series Flip-Loc clamp for electrical, hydraulic, and air lines that must be periodically removed is offered in 1/4 to 6-in. diameters. Hinge built into the parent metal allows clamp to be opened and closed without removing it from its fixed mount. Unit also features a quick-disconnect nut. Fasteners are formed from 321 stainless steel and can be furnished with cushioning materials of asbestos-Teflon, neoprene, an aromatic fuel and weather-resistant composition, or corrugated stainless steel. Made by **TA Mfg. Corp.**, 4607 Alger St., Los Angeles 39, Calif.

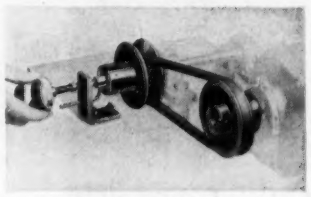
▲ For more details circle NED-450 L9 on enclosed inquiry slip ▲

OIL-RESISTANT GLOVES for handling oily metal sheet

Oilmac terry cloth work gloves treated to prevent absorption of oil will not become heavy and cumbersome while handling oily metal sheets and strip. Gloves retain their flexibility and afford a good grip on slippery items. They also cushion against rough surfaces and bruising blows. Gloves can be dry cleaned repeatedly and still retain oil-repellant characteristics. They are reversible, and are offered in both heavy and light-duty types. Made by **Jomac Inc.**, 6128 N. Woodstock St., Philadelphia 38, Pa.

▲ For more details circle NED-451 L9 on enclosed inquiry slip ▲

VARIABLE SPEED DRIVE 1/4 to 2-hp unit in ratios to 4:1



Two variable pitch pulleys, one spring loaded and the other manually actuated, are connected by either A or B belts in this variable speed drive. Belt-seating groove of the manually operated pulley is widened and narrowed by turning a hand wheel to control operation. This produces an instant inverse change in the pitch diameter of the spring-loaded pulley. The drive is offered in ratios up to 4:1 in a 1/8 to 2-hp range. Pulley sizes are 3 1/2, 4, 5, and 6 in. OD. Made by **Maurey Mfg. Corp.**, 2907 S. Wabash Ave., Chicago 16, Ill.

▲ For more details circle NED-452 L9 on enclosed inquiry slip ▲

HANDLING CORROSIVES?

Get the facts on . . .

HEAT EXCHANGERS AND CONDENSERS—28 pages covering application, design, construction, and data on thermal properties, pressure loss and other basic information. *Bulletin 949, Pfaudler Heat Exchangers and Condensers.*

STORAGE TANKS—6 pages on application, capacities, and other facts about Glasteel tanks for storing products that are corrosive, sticky, or that cannot tolerate contamination. *Bulletin 975, Pfaudler Glasteel Chemstor Tanks.*

FITTINGS—Data sheet on elbows, tees, crosses and the characteristics and advantages of Glassed Ductile Iron Fittings.* *Bulletin 977, Glassed Ductile Iron Fittings.*

Any or all FREE. Write: Pfaudler Division, Dept. NED-119, Rochester 3, N. Y.

*Pat. Pending

PFAUDLER PERMUTIT INC.

▲ For more details circle NED-453 L9 on enclosed inquiry slip ▲

New Expanded Line!

TAPER-LOCK ROLLER CHAIN DRIVES

NO REBORING! NO KEYSEATING! NO WAITING!

Dodge Taper-Lock Sprockets and Dodge Roller Chain—now in Single Strand, Double Strand, Double Pitch Transmission Series, Double Pitch Conveyor Series, Plate Sprockets. And Standard Attachments!

This new expanded line gives you Taper-Lock advantages for most all of your sprocket needs. No reboring—no keyseating—no waiting! And Taper-Lock Bushings are reuseable—interchangeable. Write for bulletin.

DODGE MANUFACTURING CORPORATION
2100 Union Street, Mishawaka, Indiana

DODGE of Mishawaka, Ind.

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HERE'S HOW TO

SAVE TIME • MONEY and TROUBLE

on *Industrial Rubber*
- *COMPOUNDING*
- *MOLDING*

If you fabricate with rubber or silicone rubber parts, or need assistance in development of special rubber compounds, investigate the advantages of using the specialized rubber compounding and molding service made available by the Colonial Rubber Company.

The full story of our long experience in industrial rubber development and production, and full details on our research laboratories, die-making facilities and rubber production plant is told in our 16-page brochure. Write for it today and read how Colonial is able to save time, money and trouble on rubber parts development and production. 1968

COLONIAL RUBBER CO.
RAVENNA, OHIO

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YOU NEED THIS . . .

FREE GIANT ALL NEW 1960 BA CATALOG

204 BIG PAGES LOADED WITH:
- Radio, TV, Electronics — sets, parts, tubes, supplies.
- Public Address & Recording Equipment.
- Power and Hand Tools.
- Educational Radio and Electronic Kits.
- Technical Books.
- Test Instruments.
- Ham Gear.
- High-Fidelity Equipment.

BURSTEIN-APPLEBEE CO.
Dept. E, 1012 McGee St., Kansas City 6, Mo.
☐ Send Free 1960 B-A Catalog No. 601.
Name.....
Address.....
City..... State.....

▲ For more details circle NED-456 L9 on enclosed inquiry slip ▲

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close MULTIWALL PAPER BAGS

FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 416 North Franklin Street, Chicago 10, Illinois

Union Special®

▲ For more details circle NED-457 L9 on enclosed inquiry slip ▲

NEW *Taylor* BLOW-DOWN TIMER !

SIMPLE DESIGN

EASY TO ADJUST

MAINTENANCE FREE

The 284RJ Blow-Down Timer is a single function repeating cycle timer. It is designed to regulate a pneumatic control valve or other air operated device for two to thirteen seconds, once every one or two minutes. The pneumatic device may also be operated continuously.

This versatile instrument can be adapted to many applications, including removal of condensate from press platens, the operation of continuous boiler blow-down systems, and similar repetitive functions at fixed intervals.

For more information call your Taylor Field Engineer, or write for Sales **Bulletin No. 98351.** Taylor Instrument Companies, Rochester, N. Y., and Toronto, Ont.

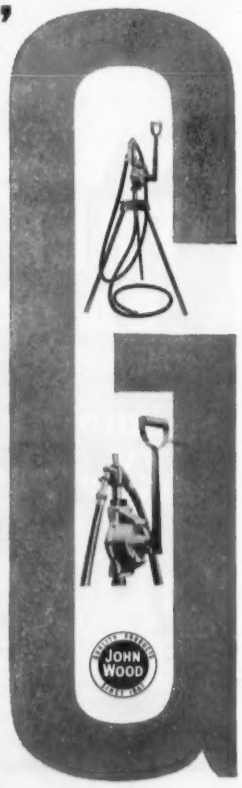
Taylor Instruments MEAN ACCURACY FIRST

▲ For more details circle NED-458 L9 on enclosed inquiry slip ▲

BIG "G" TRANSFER PUMP

Double action, piston-type transfer pump delivers more gallons with less work—saves time, money and energy. Natural, lever-action pumps on both forward and back stroke—constant flow of 20 g.p.m. with up to a 20-foot lift. Sturdy all-metal construction withstands roughest treatment. Vacuum breaker permits complete hose draining and prevents siphoning. Self-priming Big G pumps are available in a wide variety of models.

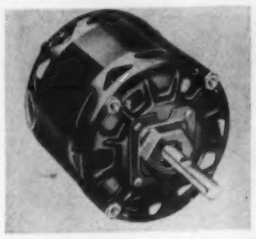
Patent 2,843,031



JOHN WOOD COMPANY
BENNETT PUMP DIVISION
MUSKEGON, MICHIGAN
In Canada: JOHN WOOD COMPANY LTD.
Toronto • Montreal • Winnipeg • Vancouver

▲ For more details circle NED-459 L9 on enclosed inquiry slip ▲

SMALL DIAMETER MOTOR has 1/8 to 1/50-hp range



Stamped steel case, exposed laminations, and a 4 1/8-in. diameter are features of the Type AO fractional horsepower MicroMotor. It is made in four and six-pole designs ranging from 1/8 to 1/50 hp. Applications include heating, air conditioning, ventilating, and refrigeration equipment and appliances. It is available with internal fans and totally enclosed or open ventilated constructions. Made by **Redmond Co.**, Owosso, Mich.

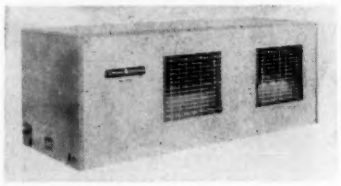
▲ For more details circle NED-460 L9 on enclosed inquiry slip ▲

VACUUM OVEN has recirculating blower

A recirculating blower increases speed in work load heating before or during vacuum pumping in this vacuum oven. Vacuum is provided by rotary vane type water cooled pump with forced feed lubrication. Oven shown can provide vacuum of up to 29.5 in. mercury and temperatures to 500° F. Line voltage Inconel sheathed heaters assure maximum service life by reducing 45-kw fast heat-up input to 15 kw after reaching maximum surface temperature. Doors on each end of 48-in. high by 72 in. long work chamber facilitate straight line processing. Made by **Grieve-Hendry Co.**, 1330 N. Elston Ave., Chicago 22, Ill.

▲ For more details circle NED-461 L9 on enclosed inquiry slip ▲

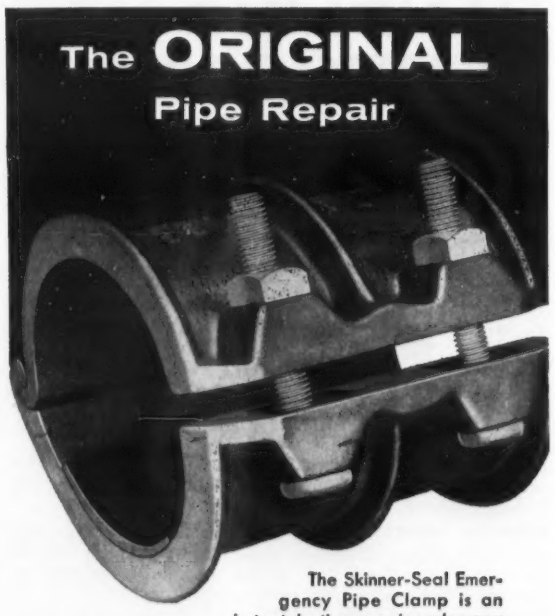
HEAT PUMP is 4-ton split-system unit



This 4-ton Weathertron split-system heat pump comprises the WTA48B outdoor condensing unit and an air handler in either vertical (WTE48AC) or horizontal (WTE48BH) models. Condenser features a G-E full-hermetic compressor; permanently lubricated blower with G-E motor; a 4-way switchover valve; automatic controls for heating, cooling, and automatic defrosting; a dryer; and service valves. Air handlers have belt driven adjustable speed blowers and operate on both 115 and 230 v. Made by **General Electric Co.**, Air Conditioning Dept., Troup Highway, Tyler, Tex.

▲ For more details circle NED-462 L9 on enclosed inquiry slip ▲

The ORIGINAL Pipe Repair



The Skinner-Seal Emergency Pipe Clamp is an instant, lasting repair under any operating condition. Rugged malleable iron. Anyone can apply in a few moments. Made in all sizes, 1/2" to 12", for steel and C. I. pipe. Stocked by practically all supply stores. The leading clamp for over 50 years.

M. B. SKINNER CO., South Bend 21, Ind. — Established 1898

▲ For more details circle NED-463 L9 on enclosed inquiry slip ▲

THE NEW UNION MATERIAL HAND CATALOG NO. 90 IS NOW AVAILAB UPON REQUEST

▲ For more details circle NED-46

Architects Engineers: Norm and
Contractor: Mille

Electrical Protection is MO *with* BUSS Fuses in the Tampa City Hospital - Ta

In this beautiful hospital it was found necessary to increase the electrical system. Modernization resulted in estimated available fault currents of 150,000 amperes.

With faults of this magnitude possible, it became essential that a superior type of protective devic

So in the ma Hi-Cap fuses element fuses, interrupting ca needed on the c

ANOTHER BUSS HI-CAP AND FUSETRON FUSE INSTALLATION —

▲ For more details circle NED-46

The Authorized SKF

Spherical, Cylindrical, Ball, and "Tyson" Tapered Roller Be

▲ For more details circle NED-46

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● For your obligation-free copy of Catalog No. 90 describing new designs . . . new economies . . . and new efficiencies in pallets, skids and boxes for unit load handling, write direct to The Union Metal Manufacturing Company, Canton 5, Ohio, or use the handy "Information Request Card" enclosed in this publication.

UNION METAL
Material Handling Equipment

4 L9 on enclosed inquiry slip ▲

an F. Six and Elliot C. Fletcher, Tampa
Schmidt, Garden and Erikson, Chicago
r Electric Co., Jacksonville, Fla.

Part of Main Switch Board Protected by BUSS Hi-Cap and FUSETRON fuses. Installation includes 6-2500 amp., 3-2000 amp., 12-1200 amp., 9-800 amp. BUSS Hi-Cap fuses . . . and 3-600 amp., 9-400 amp., 27-200 amp. FUSETRON fuses.

DERNIZED
mpa, Florida

e be used.
in switch board are BUSS and FUSETRON dual-both applied to give the pacity and dependability rcuits they protect.

WHETHER you are modernizing an electrical system or installing a new one — the high interrupting capacity, life-time dependability and maintenance-free features make BUSS Hi-Cap and FUSETRON fuses deserving of your special consideration.

for more information
On BUSS Hi-Cap Fuses . . . . . write for bulletin HCS
On FUSETRON dual-element Fuses . . . . . write for bulletin FIS

1159

BUSSMANN MFG. DIVISION, McGraw-Edison Co. ST. LOUIS 7, MO.

5 L9 on enclosed inquiry slip ▲

Distributor always comes up with the right bearing

—because he stocks SKF bearings, the most complete line of types and sizes available today. 5919

EVERY TYPE—EVERY USE
SKF®
SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.
arings
®REG. U. S. PAT. OFF.

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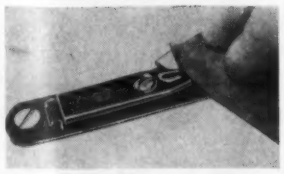
LABEL BACKING STRIPPER
speeds removal of masking paper



Production application of pressure - sensitive lined nameplates and labels is possible with the Girder Stripper, a device which facilitates the removal of the masking or backing paper. It is screwed to a bench and the nameplate is passed paper side up under the removal "finger" which can be adjusted to nameplates as thin as 0.001 in. The paper is instantly lifted and easily stripped off without distortion, even on labels with edge burrs. Price is $1. Made by **Girder Process, Inc.**, Dept. NED, 102 Hobart St., Hackensack, N. J.

▲ For more details circle **NED-467 L9** on enclosed inquiry slip ▲

PORTABLE MIST COLLECTOR
can be used close to source of mist

Collection of mist from electrolytic grinding, drilling, tapping, small lathe turning, and milling operations is function of the Misty Jr. self-contained, portable mist, fog, and vapor collector. Compact unit can be used close to the source of fluid or generated mist. It is supported on furnished chains, or placed on a nearby bench or shelf. Mist-laden air is cleaned by a fan and filter, with cleaned air returned to the working area. Removed condensate is returned to the sump through a separate return line. The 14 x 26-in. unit operates on 115-v ac. Price of $87.50 includes intake hose and return line. Made by **DustEnder Co.**, 3514 Pontiac Rd., Ann Arbor, Mich.

▲ For more details circle **NED-468 L9** on enclosed inquiry slip ▲

INTERNAL TELEPHONE SYSTEM
accommodates from 2 to 10 lines

Automatic dial telephone system for internal communication needs of small businesses or departments in larger organizations accommodates from 2 to 10 lines and is easy to install. User simply dials a single digit to reach any other phone in the system. Heart of the 10/1 system is a compact 11-lb automatic switch which is easily mounted to wall, partition, post, or under a desk. Both desk and wall telephone instruments are available in black and in colors. Switchboard is priced at $225, and each instrument is $39.75. Made by **DuKane Corp.**, St. Charles, Ill.

▲ For more details circle **NED-469 L9** on enclosed inquiry slip ▲

ALL NEW
Clarke FLOOR MAINTAINER

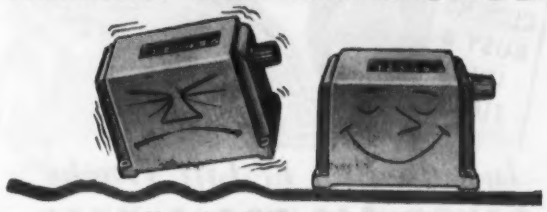
Whisper-quiet, powerful, perfect balance, low over-all height, only 10⅞" — all the features you've wanted in a floor machine. And its interchangeable attachments permit it to scrub, wax, polish, steel wool, buff, disc sand, grind . . . even shampoo carpets and rugs. Other features include dual switch control, planetary type gear drive, totally enclosed motor, fully adjustable handle, 5" diameter wheels, electrically controlled solution feed. There's nothing like the new Clarke for *your* floors.

The new Clarke line includes sizes for every need—14", 15", 17" and 20" brush diameters. Other sizes also available. Buy Clarke — Clean with Clarke. Write for new brochure.

Clarke FLOOR MACHINE CO.
2211 E. Clay Ave., Muskegon, Mich.

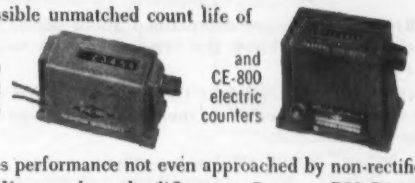
▲ For more details circle **NED-470 L9** on enclosed inquiry slip ▲

Rectification makes the difference



● *More than doubles count life*
● *Provides reliable operation from 25/40/50/60 cycles*
● *Broadens range of permissible line voltage variation*

Makes possible unmatched count life of

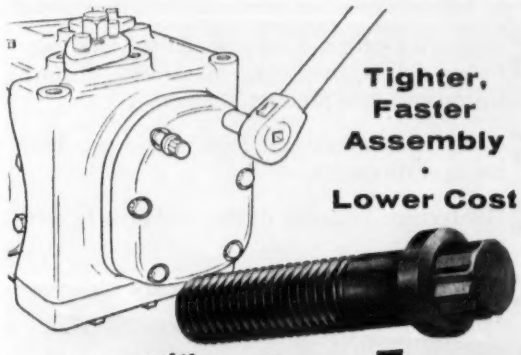


PIC-600 electric counters and CE-800 electric counters

and assures performance not even approached by non-rectified counters. *You can hear the difference.* See your PIC Distributor or Representative for demonstration or write

Manufacturers of Counters, Switches, Relays, Actuators and Automatic Valves
AUTOMATION CONTROLS DIVISION
GENERAL CONTROLS CO.
8066 McCormick Boulevard, Skokie, Illinois
Representatives and Distributors in Principal Cities of the United States and Canada

▲ For more details circle **NED-471 L9** on enclosed inquiry slip ▲



Tighter, Faster Assembly • Lower Cost

with
Countr-bor® Screws

Tighter wrenching. No special tools needed. Fits flush in standard counterbored holes. Improves product appearance.

Save up to 20% on the screws alone and get greater holding strength.

Send for literature and samples of the sizes you wish to try.

FERRY CAP & Set Screw Company
2193 Scranton Road • Cleveland 13, Ohio

▲ For more details circle **NED-472 L9** on enclosed inquiry slip ▲

Just Out! Just the ticket to cut cost!

⅛"—$3.00
¼"—$3.25

Ross CUB

NEW SPEED CONTROL VALVE
⅛" and ¼" pipe sizes in stock now!

Now a speed control valve that regulates your cylinder movement with precision and sureness, but which lists at $3.00 and $3.25. And despite its lower costs, "CUB" features the same high quality of design and workmanship you've come to expect from Ross. "CUB'S" design stresses trouble-free operation and easy maintenance. CUB is small, aluminum and lightweight. If you use speed controls, by all means call your Ross representative or write us.

Ross OPERATING VALVE CO.
161 E. Golden Gate Ave. • Detroit 3, Michigan

▲ For more details circle **NED-473 L9** on enclosed inquiry slip ▲

SERVIS RECORDERS

Installed on 17 Lift Trucks

SAVED $40,000 A YEAR

Everybody Was Happy!

WORKERS no longer complained about discrepancies in pay checks — they knew the Servis Recorder work-record was right!

OTHER OPERATING DEPTS. received several of the lift trucks no longer needed on their previous assignments due to the new efficiency.

THE DEPT. SUPERVISOR received a cash award for efficiency!

MANAGEMENT . . . well, $40,000 savings ain't hay! Management thinks Servis Recorders are wonderful — in fact they have bought 30 more! (Name of this company furnished on request.)

YOU can profit by installing Servis Recorders, too. The cost is low! Write for illustrated literature today!

THE SERVICE RECORDER CO. 1013A Rockwell Ave. CLEVELAND 14, OHIO

▲ For more details circle NED-474 L9 on enclosed inquiry slip ▲

- Removing chips, shavings, filings, and airborne debris that clog machinery, distort tolerances, mar product finishes.
- Controlling mists and fogs in wet machining operations.
- Recovering valuable dusts, coolants, heated air.
- Protecting machinery investments with preventive maintenance.

FREE...latest specs and data on TORIT Dust Collectors for handling these and other air pollution problems. TORIT: the high efficiency line with savings up to 1/2!

- Reducing absenteeism with improved health and safety precautions.

WRITE TODAY:

TORIT MANUFACTURING CO.
1133 Rankin St., St. Paul 16, Minnesota, Dept. 214

▲ For more details circle NED-475 L9 on enclosed inquiry slip ▲

PAYS FOR ITSELF . . .

CONTROLLED HUMIDITY

WITH LOW-COST **WATER OR STEAM**

Bahnson UNIT HUMIDIFIERS

Guaranteed Units Insure Quality, Reduce Storage and Production Problems

Full line includes 14 units in various sizes, capacities for your needs, any size area. Units have low first cost, low operating cost, automatic controls. Easy to install from ceilings or on walls.

TYPE E

FREE ILLUSTRATED CATALOG

Clip Coupon to Letterhead and Mail Today! Catalog details complete line of 14 humidifiers for your needs, any size area.

NAME _____

THE BAHNSON COMPANY
N-7 WINSTON-SALEM, N. C.

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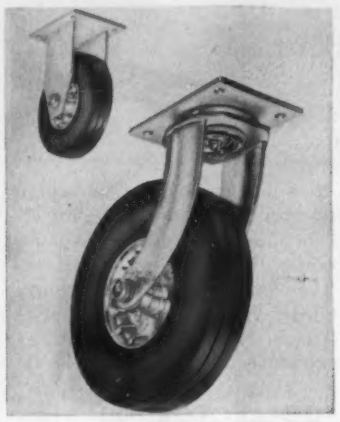
RUBBER-TIRED CASTERS
6, 8, and 10-in. diameters



Easy-Roll semipneumatic rubber - tired casters for material handling trucks absorb shocks, protect loads, and speed handling over rough surfaces. Offered with swivel and rigid frames, they have name brand tires, pressed steel hubs, roller or ball wheel bearings, double ball bearing steel races and bearings, and 3/16-in. steel top plates and forks. The 6, 8, and 10-in. diameter sizes have Zerk lubricating fittings in hub, swivel, and axle. Made by **Brennan Equipment & Mfg. Co.**, 2417 N. Ashland Ave., Chicago 14, Ill.

▲ For more details circle NED-477 L9 on enclosed inquiry slip ▲

ENVIRONMENTAL CABINET
controls temperature and humidity

Changing environmental conditions for testing products and controlling research processes are simulated by the LSC-16 laboratory cabinet. Cabinet has over 17 cu ft capacity with temperature range from room to 180° F. Relative humidity range is up to 96 per cent. Special cabinet with 0 to 300° F range is also available with cycling time pattern control and cooling unit to meet JAN and MIL specs. Side ports allow insertion of instrument leads to data recorders. Door with Thermopane inspection window and wiper is obtainable. Made by **Anetsberger Brothers, Inc.**, 186 N. Anets Dr., Northbrook, Ill.

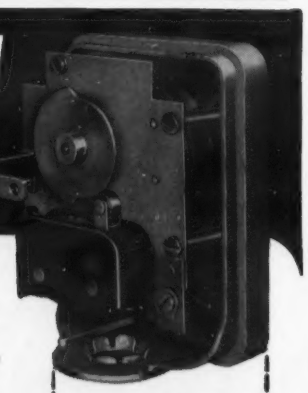
▲ For more details circle NED-478 L9 on enclosed inquiry slip ▲

Building Maintenance Manual

S. C. Johnson & Son, Inc., Service Products Div.—Divided into 12 sections, 27-page "Building Maintenance Manual" comprehensively summarizes the latest developments in methods, materials, and products for solving day-to-day maintenance problems. Covered are floor care products for 12 different floor surfaces; floor cleaning procedures; floor finishing and maintenance; general cleaning of walls, washrooms, and furniture; care of maintenance equipment; safety suggestions; special problems; stain removal; and work saving products.

▲ For more details circle NED-479 L9 on enclosed inquiry slip ▲

HAGEN
repeat cycle timers . . .



FOR INTERRUPTING ELECTRIC CIRCUITS AT A PRE-ARRANGED TIME SETTING

- ★ Split Cams for variable percentage setting
- ★ Time cycles from 1 sec. to 60 min.
- ★ Contact Rating 15 Amps. at 115 V. AC. 7.5 Amps. at 440 V. AC.

MODEL 71

ENCLOSED

Ideal for grease injection, motor control, humidifiers, signal lights, pulsing circuits, vending machine and appliance control. One and two circuit models available.

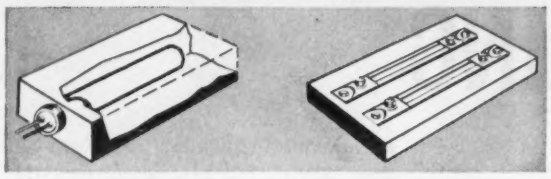
Write for Bulletin 1310 for complete specifications and types available. Address Dept. NED-1159.

HAGEN MANUFACTURING COMPANY
Baraboo, Wisconsin

▲ For more details circle NED-480 L9 on enclosed inquiry slip ▲

For your product or process

A complete line of General Electric heaters for surface heating applications



Ideal for products or processes requiring either "spot" heat or evenly distributed heat General Electric heaters help you:

Save heat: G-E heaters frequently may be cast into metal parts or inserted in holes so that heat is localized at the point of need. Heat losses around the sides and through pipes are minimized. Working conditions are more comfortable.

Reduce fire hazards: Safer, quicker electric heat eliminates danger of open flame; inconvenience of smoke and fumes.

Get accurate control: To give you close heat regulation for changing conditions, precise thermostat controls are available.

FREE BULLETINS

For more information, write Section 723-31, General Electric Company, Schenectady 5, N. Y., and ask for GEA-6146, SURFACE HEATING SELECTOR GUIDE, and GEC-1005, CATALOG OF GENERAL ELECTRIC HEATERS AND DEVICES.

GENERAL ELECTRIC

▲ For more details circle NED-481 L9 on enclosed inquiry slip ▲

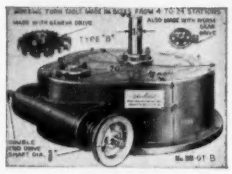
EISLER

FOR 39 YEARS

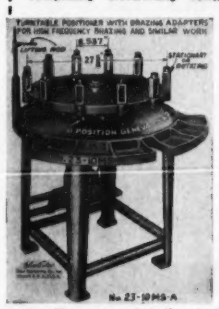
We supply any part or complete equipment . . . Special turntables made to order

INDEXING TURNTABLES
MORE THAN 100 DIFFERENT TYPES

- FOR WELDING • BRAZING • SOLDERING • SPRAYING
- GLASS INSULATOR MELTING AND GLASS GLAZING with rotating stations and indexing with barrel cam or Geneva gear action.
- For work transferring, tilting positions. Motorized or hand operated.



Eisler Indexing Turntables are completely electrically controlled



AND CAMS MADE TO YOUR SPECS!

"Ask for catalog 88-57"

EISLER ENGINEERING CO., INC.
740 SO. 13th ST., NEWARK 3, N. J
Charles Eisler, Jr., President

▲ For more details circle NED-482 L9 on enclosed inquiry slip ▲

ANOTHER *PANNIER* MASTER MARKER!

PANNIER'S INSPECTORS' HAMMERS WEAR LONGER

Many styles and sizes for metal marking. Letters, numbers or symbols on either or both ends; interchangeable type heads available.

Write for data.

MONEY-SAVING FEATURES:

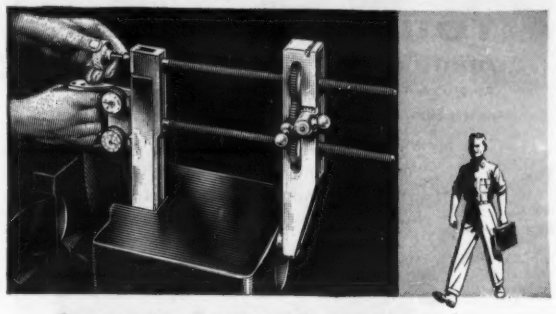
- Sturdy, balanced construction
- Long-lasting tool steel head
- A style for every (any) need
- Sharp, clean marking

BIRTHMARKED MATERIALS

MARKING DEVICES
THE PANNIER CORPORATION

301 PANNIER BUILDING PITTSBURGH 12, PA.
Offices: Los Angeles • Cleveland • Chicago • Philadelphia • Birmingham

▲ For more details circle NED-483 L9 on enclosed inquiry slip ▲



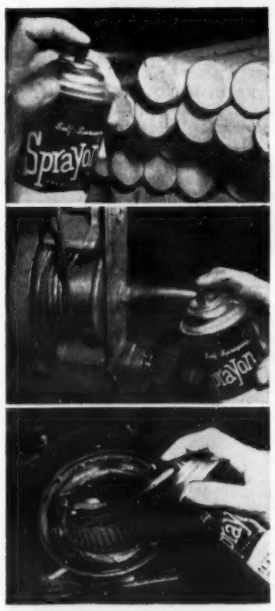
Accurate Rockwell readings with PORTABLE hardness tester

Perfect for on-the-job production testing of both parts and stock materials, because it weighs just 3 lbs. 6 oz., gives accurate readings at any angle. Requires no set-up time, eliminates need for carrying large pieces to test bench or cutting test samples. Uses standard indentors and loads so no scale conversions are necessary. Rockwell scales A, B, C, D, E, F, G, H and K available as standard.

FOR A DEMONSTRATION . . . WRITE DEPT. NED-1159

Riehle TESTING MACHINES
A DIVISION OF
American Machine and Metals, Inc.
EAST MOLINE, ILL.

▲ For more details circle NED-484 L9 on enclosed inquiry slip ▲



The better, faster, cheaper way to do a hundred maintenance jobs!

Save time and labor—get better results with "push-button maintenance". First full line of aerosols covers virtually every self-spraying product used in industry, from silicone mold release to blue layout fluid. The complete Sprayon line includes a number of uncommon items—some of which may solve problems for you. Stocked by selected Industrial Distributors and mill supply houses. Manufactured by Sprayon—oldest and leading custom-loader of aerosol specialties.

COLOR CODE ENAMELS
MARKING PAINTS
EQUIPMENT FINISHES
SPECIAL LUBRICANTS
PROTECTIVE COATINGS
DEGREASERS

WRITE FOR FREE HANDBOOK
of 46 self-spraying maintenance and production aids.
Keep this handy reference in your file.

Some key territories are open for industrial agents and distributors. Write for information.

Industrial Supply Division
SPRAYON PRODUCTS, INC. 2069 East 65 St., Cleveland 3, Ohio

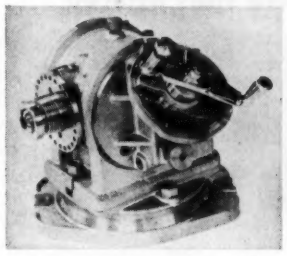
▲ For more details circle NED-485 L9 on enclosed inquiry slip ▲

ELECTROLYTIC LAP-POLISHER for difficult-to-polish metals

Reinacher principle of electromechanical polishing used by Relapol electrolytic lap-polishing apparatus applies direct current voltage to the specimen while slowly abrading it on a polishing wheel covered with abrasive electrolyte slurry. Apparatus consists mainly of a power pack, polishing disc, a sleeve with contact to the electrode, and a polishing machine. Noble and precision metals, plus those difficult to polish by usual methods, including tungsten, rhenium, molybdenum, and their alloys, are polished by the equipment. Available from **William J. Hacker & Co.**, Box 646, West Caldwell, N. J.

▲ For more details circle NED-486 L9 on enclosed inquiry slip ▲

DIVIDING HEAD indexes within 1 min in 360 degrees



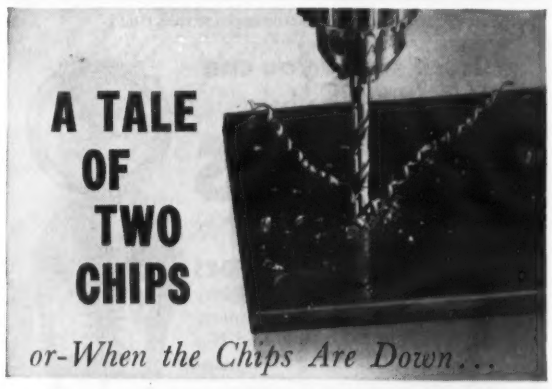
Heavy duty 10-in. Model E universal dividing head features compound, direct, and crank indexing for a wide range of divisions. Indexing accuracy is within 1 min in 360 degrees. The worm is quickly disengaged for direct indexing. Optional equipment includes an auxiliary swivel base for 360-degree longitudinal plane swivelling and 2-in. riser blocks for headstock and tailstock. Accessories include a draw-in collet attachment for No. 5C collets up to 1 1/16-in. capacity, as well as chucks and face plates. Made by **Nichols-Morris Corp.**, Box 430, White Plains, N. Y.

▲ For more details circle NED-487 L9 on enclosed inquiry slip ▲

DUST MASK molded of plastic foam

Entire surface of this molded plastic foam Resp-R-Aid dust mask acts as the filter area. Thus, inhalation resistance is very low. The soft urethane plastic mask weighs hardly more than an ounce and has a rolled edge for snug, comfortable fit to any face contour. Mask has a plastic chassis which houses an inhale valve and two exhale valves and an adjustable neckband. Mask can be washed repeatedly, is nonallergenic, and will not absorb odors or mildew. Made by **Watchemoket Optical Co.**, 232 W. Exchange St., Providence 3, R. I.

▲ For more details circle NED-488 L9 on enclosed inquiry slip ▲



A TALE OF TWO CHIPS

or-When the Chips Are Down...

Do you get more holes per minute • longer drill life • closer tolerance holes • less operator fatigue?

Equal size chips mean you are getting these results from your drills.

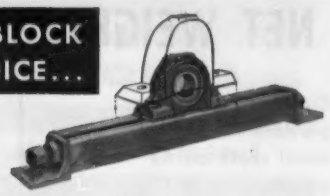
Hand sharpened drills should produce equal size chips . . . but only after time-consuming work by an expert. Now, with the Black Diamond Drill Grinder*, anyone in your plant can do the job with repeat accuracy in just a few seconds. Get the facts by return mail. Write exclusive distributor:

EDWARD **BLAKE** COMPANY, INC.
Dept. 8, 570 Pleasant St., Watertown, Mass. WA 6-0100

***Black Diamond Saw & Machine Works, Inc.**
Natick, Mass.- Manufacturers of Black Diamond and Worcester Drill Grinders.
Black Diamond Drill Grinders: #70 drills up to ¼" Worcester Drill Grinders: ½" drills up to 2½"

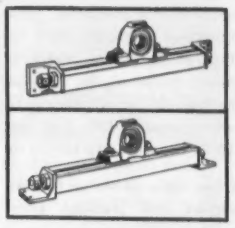
▲ For more details circle NED-489 L9 on enclosed inquiry slip ▲

USE PILLOW BLOCK OF YOUR CHOICE...



Versa MOUNT

TAKE-UP FRAME
Mount Side or Top

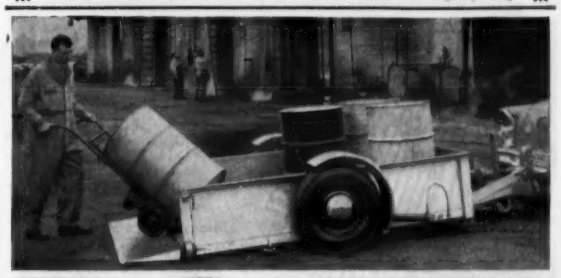


- Use with any standard pillow block. One basic frame size for all makes and types—ball, roller or babbited.
- Mounts either side or top. Simply loosen locknut and turn mounting flange to desired position.
- Easily installed on old or new equipment.
- Delivery from stock in sizes for ½" to 2⅞" pillow blocks, travel lengths from 2" to 36".
- Mounting screw is totally enclosed for protection against dirt, contamination, etc., yet readily accessible when lubrication or cleaning is desired.
- All parts can be quickly disassembled without special tools and *are individually replaceable.*

Request Bulletin V-647 and Prices.

LOVEJOY FLEXIBLE COUPLING CO.
4803 W. LAKE STREET • CHICAGO 44, ILLINOIS

▲ For more details circle NED-490 L9 on enclosed inquiry slip ▲



DOWN UP

It's Trailevated! This is no ordinary trailer! It's Trailevator! Lowers to ground level . . . lifts load hydraulically in seconds . . . ready to roll! One man operates it . . . loads and unloads any cargo—anywhere—faster, safer, cheaper! Learn how Trailevator brings major cost-savings never before possible.

WRITE FOR BULLETIN T-58. *Trailevator Division, Magline Inc., Pinconning, Michigan.*

TRAILEVATOR
TAKES THE LIFT OUT OF LOADING

▲ For more details circle NED-491 L9 on enclosed inquiry slip ▲

NEW BOOKLET FROM KODAK

Get your free copy!

Just off the press—new booklet about *completely different* Verifax Copying method. Tells how all types of businesses—some like yours—use Verifax to save time in systems work as well as general office copying.

Send for your free copy today. Or phone your Verifax dealer and ask for free demonstration, too. (Check Yellow Pages under "duplicating" or "photocopying" machines.)

Verifax Copying DOES MORE . . . COSTS LESS . . . MISSES NOTHING

MAIL COUPON TODAY

Eastman Kodak Company, Business Photo Methods Division 83-11
343 State Street, Rochester 4, N. Y.
Send Verifax booklet. Also names of nearby dealers.

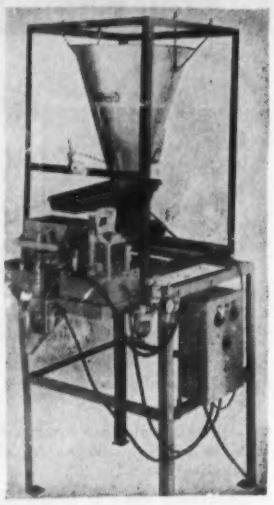
Name_____
Street_____
City_____ State_____

Kodak

▲ For more details circle NED-492 L9 on enclosed inquiry slip ▲

NET WEIGHING MACHINE

Over-under indicator provides constant visual check on package weight



This machine's Exact Weight precision scale, with visual indicator, provides a continual reference for fast and accurate adjustment. Eliminates spot checking. Vibratory feed has two speeds, fast to trickle, to assure accurate fill. Weigh hopper is air-cylinder operated. Model 620 NW has 10 lb. capacity; 610 NW, 3 lb.

Other types of weigh feeders, sackers and precision scales available in capacities for a wide range of weighing and check-weighing jobs. Write for Bulletin 3318.

Find us in your local "Yellow Pages"

Sales and Service Coast to Coast

THE EXACT WEIGHT SCALE CO.
930 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: 5 Six Points Road, Toronto 18, Ont.
BETTER QUALITY CONTROL...BETTER COST CONTROL

▲ For more details circle NED-493 L9 on enclosed inquiry slip ▲

THE WEDGE-WIRE
*TAPER-SLOT
patent applied for

*From loop to loop, the opening or slot gradually increases in width. This new design enables materials that would normally lodge between the wires to be transported, with the flow of the mass, to the larger opening of the taper slot. At this point the material either passes through the screen or becomes loose. In addition, the "dip" created by Wedge-Wire loop construction, frees oversize materials and allows them to continue on with the material flow. These factors are responsible for the high efficiency of the TAPER-SLOT screen.

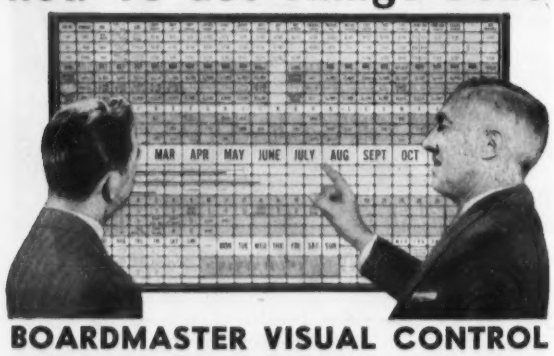
*for example: .016 opening tapered to .024 — the combination of opening sizes would be the same between each loop throughout the entire screen.

The new TAPER-SLOT can be easily interchanged with other types of Wedge-Wire Kleenslot screens. Available in all Wedge-Wire materials.

for additional information . . . write
WEDGE-WIRE CORPORATION
Wellington, Ohio

▲ For more details circle NED-494 L9 on enclosed inquiry slip ▲

How To Get Things Done



BOARDMASTER VISUAL CONTROL

Gives you a Graphic Picture of your operations, spotlighted in color. You See what is happening at a glance. Facts at eye level—saves you time, prevents errors.

Simple, flexible—easily adapted to your needs. Easy to operate. Type or write on interchangeable cards, snap in grooves. Ideal for production, scheduling, sales, traffic, inventory, etc. Made of metal. Compact, attractive.

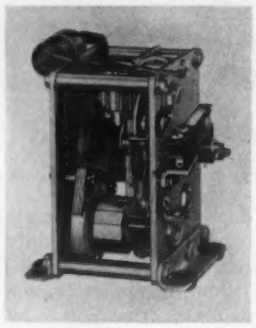
Complete Price $49.50 Including Cards

FREE 24-Page Illustrated Booklet N-200 Mailed Without Obligation

GRAPHIC SYSTEMS 55 WEST 42nd STREET NEW YORK 36, N. Y.

▲ For more details circle NED-495 L9 on enclosed inquiry slip ▲

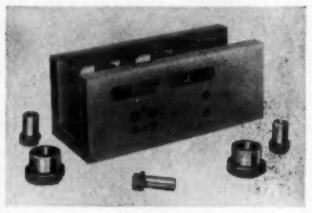
DC MOTORS & TIMERS
produce 150 oz-in. torque at 1 rpm



Improved Amblo direct-current motors and timers deliver constant speed, even with wide voltage and load fluctuations. High torque, low current-drain units are suited for applications requiring accuracy under severe vibration, gravity, and temperature conditions. With operating voltage ranging from 3 to 110 v dc and 0.06 to 2-w input, torque up to 150 oz-in. can be produced at 1 rpm. Speed from 900 rpm to 1 revolution in 24 hr or more can be provided. Made by **Amglo Corp.**, 4325 N. Ravenswood Ave., Chicago 13, Ill.

▲ For more details circle NED-496 L9 on enclosed inquiry slip ▲

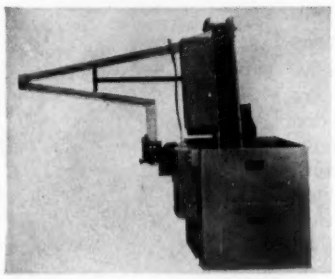
JIG & FIXTURE PARTS
various shapes and sizes offered



Small, rigid jigs and fixtures for drilling and milling can be made with a minimum of machining by using standard Micron cast iron shapes. Available are U's, T's, H's, hollow squares, rectangles, and flat plates in a range of sizes from 3 to 8 in. and lengths of 25 in. which are cut to order. Parts of high tensile strength cast iron have all outside surfaces machined square and parallel within 0.005 in. per foot. Made by **Ex-Cell-O Corp.**, 1200 Oakman Blvd., Detroit 32, Mich.

▲ For more details circle NED-497 L9 on enclosed inquiry slip ▲

HOPPER FEED TRANSFER
changes position of rolling parts

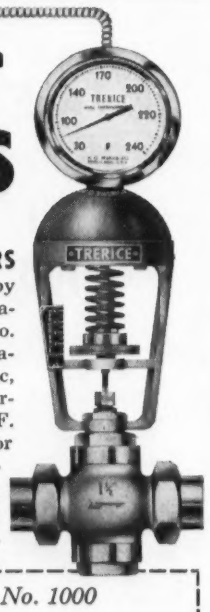


Changing parts from a rolling to an end-to-end position is function of this transfer equipment, designed for use with Model 4000 elevating hopper feed. Rate of feed ranges from 0 to 400 parts of varying thicknesses and diameters per minute. With different tooling on the hopper feed, cylindrical or headed pieces can be handled. Hopper capacities are 7½ or 12 cu ft. Elevating heights of the self-contained unit can be varied. Made by **Production Feeder Corp.**, 3130 Johnnycake Ridge Rd., Mentor, Ohio.

▲ For more details circle NED-498 L9 on enclosed inquiry slip ▲

Here's how you can save money by

DEGREES



TRERICE SELF-OPERATING TEMPERATURE REGULATORS cut your liquid processing costs by maintaining the *one best* temperature. Trerice No. 90000 and No. 90400 Self-Operating Temperature Regulators insure automatic, precision control of liquid temperatures between 40° F. and 300° F. No air or electricity required for operation. Available in either direct or reverse acting models; stainless steel or bronze trim. Most ranges and sizes in stock.

Write today for Bulletin No. 1000

Name.....
Address.....
City..... Zone..... State.....

H.O. TRERICE CO. 1424 W. Lafayette Blvd. Detroit 16, Michigan

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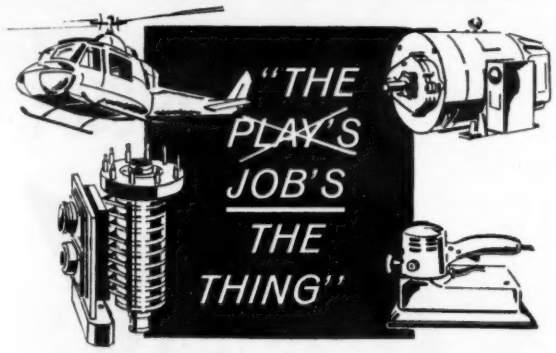
AMERICAN MONORAIL 1116 E. 200th STREET CLEVELAND 17, OHIO

▲ For more details circle NED-500 L9 on enclosed inquiry slip ▲



That's what counts! Drawing upon literally hundreds of Superior brush grades and contacts, our responsibility is to fit your job *exactly*, whether on original equipment or in maintenance. The Superior representative will make sure that you get the very utmost in performance and long life. Forty years' experience goes into his recommendation and ours.

Ask for "Get the Most Out of Your Carbon Brushes"

SUPERIOR CARBON PRODUCTS, INC.
9115 George Avenue, Cleveland 5, Ohio

Superior CARBON BRUSHES Since 1919

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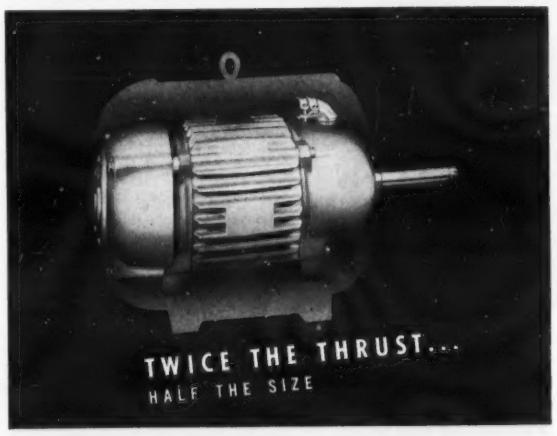

Peerless arbor motors have oversized shafts and bearing construction to permit them to withstand almost twice as much axial and radial thrust as comparable conventional units. They are just half the size of standard motors of the same rating. Peerless builds them from 1 to 10 HP at 3450 RPM in cast, malleable or ductile iron frames. Peerless engineers will work with you to apply these units to your machine tools.

ELECTRIC MOTOR DIVISION
THE Peerless-Electric® COMPANY
FANS · BLOWERS · ELECTRIC MOTORS
1527 W. MARKET ST. • WARREN, OHIO

▲ For more details circle NED-502 L9 on enclosed inquiry slip ▲

NEW HOT SPRAY FOR ALL-WEATHER MASTIC APPLICATION

The new Spee-Flo POWERMASTIC has been designed specifically for the application of asphaltum and coal tar mastics. Problems of applying mastics in cold and variable weather have been completely eliminated. Heated application lowers viscosity, speeds solvent evaporation and permits lower atomizing pressures . . . resulting in a faster, smoother, denser coating with substantial savings in time and material. The Powermastic Package incorporates a heavy-duty 10-1 ratio, double-action, high-volume pump; a precision, dual-regulation gun; and a rugged heater capable of delivering up to 90 gallons of hot mastic per hour. The Powermastic Heater is offered separately for existing mastic systems.

Bulletin PM 920 contains complete specifications and description of optional equipment. Write Spee-Flo Co., 6614 Harrisburg, Houston 11, Texas. 159

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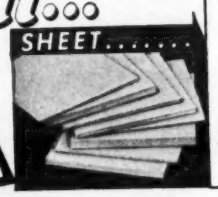
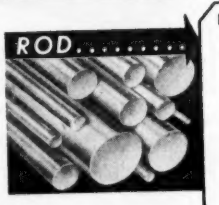
Teflon*...

Your Best Source is JOHN CRANE



Thickness Inches	Nominal Size
1/16	12 x 12
3/32	18 x 18
1/8	24 x 24
3/16	36 x 36†
1/4	48 x 48†
3/8	
1/2 & Up	

† Can be furnished in 1/2 sheets



DIAMETER INCHES	
1/4	1
5/16	1 1/16
3/8	1 1/8
7/16	1 1/4
1/2	1 3/8
9/16	1 1/2
5/8	1 3/4
3/4	2
7/8	2 1/4
	2 1/2
	3

Other diameters on specification

TYPICAL SIZES INCHES	
O. D.	I. D.
3/8	1/4
1/2	3/8
3/4	1/2
1	3/4
1 1/2	1
2 1/2	1 1/2
3	1 3/4

HERE'S WHY: You can order in quantity, in a wide variety of sizes—and be certain of uniformity. Strict density control assures non-porous Teflon—free from any flaws that might affect end use or product. Dimensions are accurate—no rejects, waste of material, loss of time. You get product purity—Teflon at its best in every characteristic. Delivery is prompt—the quantity you want when you want it.

Request full information, including informative bulletin.

CRANE PACKING CO. 6411 Oakton St., Morton Grove, Ill., (Chicago Suburb) In Canada: Crane Packing Co., Ltd., Hamilton, Ont.

*DuPont Trademark

John Crane CRANE PACKING COMPANY

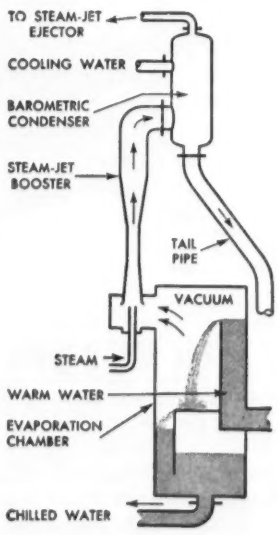
▲ For more details circle NED-504 L9 on enclosed inquiry slip ▲

How to CHILL WATER with STEAM

I-R Steam-Jet Coolers chill large volumes of water down to temperatures as low as 35 F, with no power but *steam*—and no refrigerant except *water*. The simplicity, economy, dependability and safety of water-vapor refrigeration makes it the ideal solution to process cooling problems wherever steam is available.

The cooling action is achieved by *evaporating* a small portion of the water to be chilled, in a vacuum chamber which is evacuated by a steam-jet ejector. The ejector can discharge into either a barometric or surface condenser. Overload capacity is higher than with any other system. And no special foundations nor vibration-isolating devices are required.

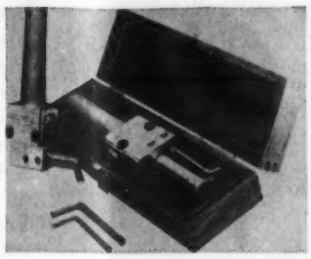
Send for Bulletin No. 9143-B



Ingersoll-Rand
4-774 11 Broadway, New York 4, N. Y.

▲ For more details circle NED-505 L9 on enclosed inquiry slip ▲

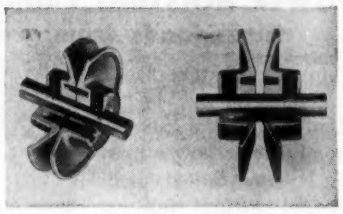
BORING HEAD
uses interchangeable shanks



Body of the No. 50 boring head is made from a single solid piece of steel and its three-position tool block has a large adjustable dovetail. Two clamping screws are positioned so that all cutting strain is against solid metal. Interchangeable piloted type shanks offer savings in operating time and tool inventory. An individual adjusting screw nut has a collet type split so that adjustments for wear can be made without dismantling the tool. The chrome plated head accommodates both 1/2 and 3/8-in. round tools. Made by **Maxwell Industries, Inc.**, 493 E. Fifth Ave., Ashtabula, Ohio.

▲ For more details circle NED-506 L9 on enclosed inquiry slip ▲

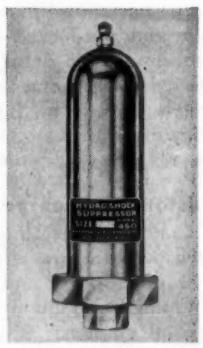
VARIABLE PITCH PULLEY
used with 3/8, 1/2, and 5/8-in. belts



Micrometer adjustment sets pitch to desired rotational speed on this 3 1/4-in. diameter variable pitch V-belt pulley, each half of which is directly fastened to the motor shaft. Adjustment is made by turning socket cap screw on the end of the hub. It is true running and always in balance. Pulley can be used with 3/8, 1/2, and 5/8-in. top width V-belts. Made by **Tann Corp.**, Congress Drives Div., 3750 E. Outer Dr., Detroit 34, Mich.

▲ For more details circle NED-507 L9 on enclosed inquiry slip ▲

WATER SHOCK SUPPRESSOR
absorbs "hammer" in pipe lines



Effective control of water shock or "hammer" in pipe lines is achieved with this shock suppressor. Shock is absorbed by freely moving piston which works against a cushion of compressed air within a cylinder. It checks any hammer developing from sudden closing of a faucet or valve in the line. Water contacts only nonferrous metals in the unit. Suppressor can be installed in any attitude relative to water pipe line. Made by **American Tube Products, Inc.**, West Warwick, R. I.

▲ For more details circle NED-508 L9 on enclosed inquiry slip ▲

You specify the PRESSURE and Ingersoll-Rand will specify the PUMP

10-972

From the world's most *complete line* of centrifugal pumps, I-R engineers can select the one that meets your exact requirements to *best advantage*.

Ingersoll-Rand
11 Broadway, New York 14, N. Y.

PUMPS • COMPRESSORS • DIESEL ENGINES • AIR & ELECTRIC TOOLS
TURBO BLOWERS • CONDENSERS

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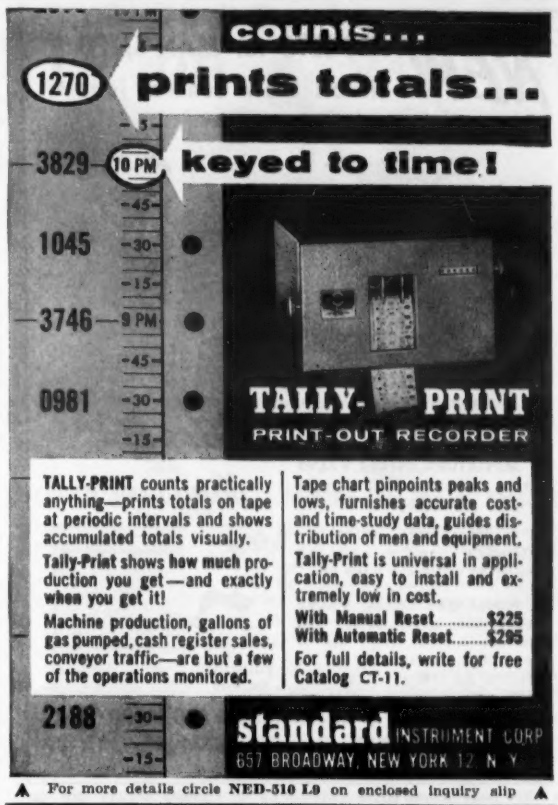

TALLY-PRINT counts practically anything—prints totals on tape at periodic intervals and shows accumulated totals visually.

Tally-Print shows how much production you get—and exactly when you get it!

Machine production, gallons of gas pumped, cash register sales, conveyor traffic—are but a few of the operations monitored.

Tape chart pinpoints peaks and lows, furnishes accurate cost- and time-study data, guides distribution of men and equipment.

Tally-Print is universal in application, easy to install and extremely low in cost.

With Manual Reset.....$225
With Automatic Reset.....$295

For full details, write for free Catalog CT-11.

standard INSTRUMENT CORP
657 BROADWAY, NEW YORK 12, N. Y.

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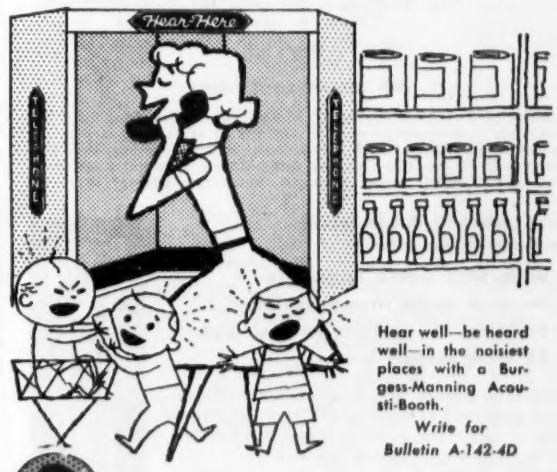
No, Mom, the children are not sleeping — you just can't hear them from this —

BURGESS-MANNING ACOUSTI-BOOTH



Hear well—be heard well—in the noisiest places with a Burgess-Manning Acousti-Booth.

Write for Bulletin A-142-4D

Burgess Cooling Accessories

BURGESS-MANNING COMPANY
Architectural Products Division
749 E. Park Avenue, Libertyville, Illinois
Dallas, Texas

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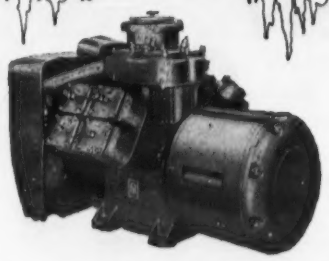
AIR COMPRESSORS



NO FREEZING PROBLEMS with the Ingersoll-Rand air-cooled Type 40 motor compressors. No water piping or jackets to clog or freeze up; multi finned-tube intercoolers with forced-draft cooling keep compression efficiency high. Because of excellent running balance, these compact units require no special foundations. They are shipped ready-to-run; easy to install, relocate and maintain. Available from 25 hp to 125 hp, 80 psi to 200 psi discharge pressure. Send for 36-page catalog with full description of I-R Type 40 compressors.

Ingersoll-Rand Dept. PM
1-606 11 Broadway, New York 4, N. Y.

OVER 1000 COMPRESSOR TYPES & SIZES...FROM 1/4 TO 9000 HORSEPOWER

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NEW MIDGETS for MAN-SIZED air-oil Flow Control jobs!

Ⓐ MINIATURE FLOW CONTROL — Operates on 1 lb. differential. Limited check one direction — full flow other. Recommended working range 0-250 psi. Air flow rate 3.6 CFM at 50 psi.

Ⓑ MINIATURE NEEDLE VALVE Precise control of air-oil in either direction. Range 0-2000 psi.

Ⓒ Ⓓ MINIATURE QUICK CONNECT — Air flow rate 2.7 CFM at 50 psi. Range 0-150 psi.

Ⓔ MINIATURE CHECK VALVE Poppet type, spring loaded. Full flow one direction only. Use in any position. Holds 0-2000 psi. Air flow rate 3.5 CFM at 50 psi.

Clippard Minimatics TRADE MARK

Write, NOW for NEW BULLETIN No. 8-59

Clippard INSTRUMENT LABORATORY, INC.
7390 Colerain Rd., Cincinnati 39, O. • Phone: JAckson 1-4261
Manufacturers of Miniature Pneumatic Devices, R.F. Coils, Electronic Equipment

▲ For more details circle NED-513 L9 on enclosed inquiry slip ▲

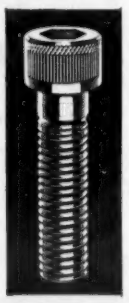
The big change is in the threads

OLD THREAD ROOT FORM

COMPARE THE THREAD ROOT FORMS. The old thread form has flat roots and sharp corners where cracks start. The larger root radius in UNBRAKO Hi-Life threads has smooth, flowing curve that distributes stresses for greater fatigue life . . . larger body cross section increases tensile strength, permitting greater preloads.

New UNBRAKO Hi-Life socket head cap screws offer:

- Up to 100% greater fatigue life
- Increased tensile strength capacity
- Additional life insurance for your product
- All at no increase in cost



SPS distributors are now stocking these new precision fasteners with the improved thread root form, evolved through research on high-strength fasteners. Ask your SPS distributor for a copy of Bulletin 2577. Or write:

INDUSTRIAL FASTENER Division SPS
JENKINTOWN 24, PENNSYLVANIA

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NEW

Disowheel® "press-ons" wear longer under tougher conditions

When you put on tough, wear-resistant Disogrin "press-ons" you stretch a few months service into a year or more. And the tougher the floor conditions, the greater advantage of Disogrin wheels. Because of their superior resiliency, Disogrin "press-ons" give a smoother ride for operator, truck and load. A ride that means less operator fatigue, fewer breakdowns, less load damage. Available in all sizes up to 22". Write today—we'll send you a practical wheel analysis chart and complete information on DISOWHEEL.

DISOGRIN INDUSTRIES
510 SOUTH FULTON AVENUE • MOUNT VERNON, NEW YORK
Offices and Distributors in Principal Cities

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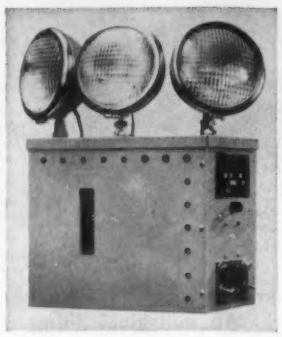
EMERGENCY LIGHT SYSTEM powers four 25-w sealed beams



Sensing device in the Yorklite emergency lighting system turns lights on the instant 115-v building power goes off. When power supply returns, lights automatically turn off and recharging starts. Each unit powers up to four 25-w sealed beam floodlights. Lights will face any direction. One lamp is mounted in each unit, and one to three of the other lamps can be installed remotely, or on the unit itself. Self-contained unit, including battery, charging circuit, and selenium rectifier, measures 12½ x 11¼ x 8 in. and weighs 60 lb. It can be mounted on wall, suspended from ceiling, or placed on floor. Made by **York Lighting, Inc.**, 339 W. Philadelphia St., York, Pa.

▲ For more details circle NED-516 L9 on enclosed inquiry slip ▲

POWER HOISTING LADDER raises loads from ground level

Manual up-the-ladder materials handling is eliminated by the Drummond-Taylor power hoisting ladder. Suited for industrial lifting, hoisting, and general maintenance, it lifts loads from ground level, with speed controlled by a foot accelerator from 0 to 105 fpm. A friction clutch holds the load at any point, and a manual drag brake controls the carriage descent. Aluminum alloy ladder is easy to handle and position, has nonslip safety feet and pin-locked rungs, and is offered with gasoline or electric drive unit. Several carriage styles are offered for various types of loads, including bulk materials. Made by **Bush Mfg. Co.**, 900 Rochester Rd., Clawson, Mich.

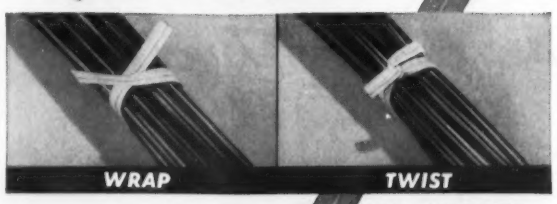
▲ For more details circle NED-517 L9 on enclosed inquiry slip ▲

Custom Engineered Cranes

Conco Engineering Works—Electric and hand operated overhead traveling cranes, jib cranes, hand hoists, I-beam trolleys, and specially engineered crane-type equipment are among items covered in 12-page catalog. Special emphasis is given to custom-engineered overhead electric traveling crane bridges and electric trolley hoists available in a range of capacities, speeds, and spans.

▲ For more details circle NED-518 L9 on enclosed inquiry slip ▲

Speed Tying Operations!



★ Cheaper than String
★ Faster than Tying
★ Sure Grip
★ Colorful

NO KNOTS TO TIE!

Cut your tying time in half! Hanscom-Ties are the fast, sure way to bundle wires, cords, coils, etc. Nothing to tie. Just wrap 'em around and twist. For temporary or semi-permanent holding. Available in cut lengths 1" to 24" and on spools — bright colors or printed. Prices from 26c per thousand. WRITE FOR SAMPLES and TRY 'EM YOURSELF.

H.F. Hanscom & Co., Inc.
15 Virginia Avenue
Providence 5, R.I., U.S.A.

Top view of Hanscom-Tie is shown. Bottom is flat

Hanscom-Ties®

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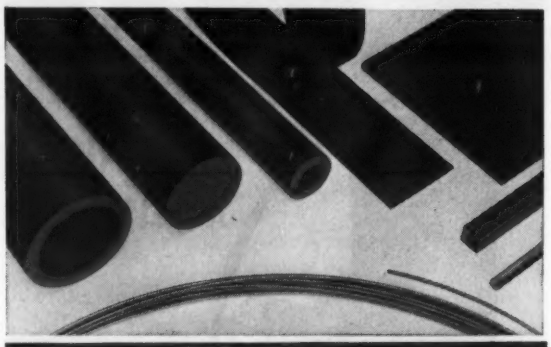

NYLATRON® G S

Gives the property advantages of nylon, PLUS... improved mechanical characteristics:

- Greater Rigidity—higher modulus of elasticity, less deformation under load.
- Higher Heat Distortion Temperatures—distortion temperatures 70% higher than nylon 101.
- Lower Thermal Expansion—coefficient approximately 60% of nylon 101.
- Low Surface Friction—can be used without lubrication.
- High Wear and Abrasion Resistance—can outlast, outperform metal.

NYLATRON GS, a molybdenum disulphide filled nylon*, is formulated to expand the field for nylon parts such as bearings, bushings, liners or other wear parts.

Stock shapes of NYLATRON GS include rod, strip, tubing, tubular bar and plate in all standard sizes—for rapid, low-cost fabrication on standard metalworking tools. In addition, it is available in powder form for molding.

Polymer can also supply stock shapes of all commercial nylons on request. Write today for detailed information about NYLATRON GS—or other nylon formulations to meet your specific requirements.

*Patents applied for

THE POLYMER CORPORATION OF PENNA.
Reading, Pennsylvania
Export: Polypenco, Inc., Reading, Pa., U.S.A.
POLYPENCO Nylon, POLYPENCO Teflon†, NYLAFLOW® and NYLATRON® GS.
†DU PONT TRADEMARK

POLYPENCO

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BENCH TOPS
Laminated Hard Maple

NOW—
Custom Benches with Standard Accessories

Customize a bench to fit your requirements. Start with a Tolco basic bench and, by adding shelves, back-stops, drawers, cupboards, the Tolco Standard becomes a custom-built bench, designed by you for your needs. Like more information? Write, wire, or phone.

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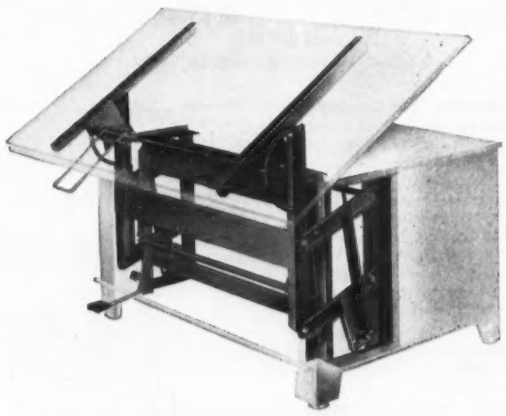
265 N. Freedom Avenue
Alliance, Ohio

"Doing business with top distributors, exclusively, for 64 years."

▲ For more details circle NED-521 L9 on enclosed inquiry slip ▲

MAYLINE



The May-O-Matic Lifting Unit!

The May-O-Matic drafting table lifting unit controls top height and top tilt action. It counterbalances up to 55 lbs. weight added by drafting machine, etc.

The Mayline lifting unit is described in Folder F-25. Send for this and Folder S-22 on Table combinations.

MAYLINE COMPANY, INC.
617 No. Commerce St., Sheboygan, Wisconsin

MAYLINE

▲ For more details circle NED-522 L9 on enclosed inquiry slip ▲

DON'T LOSE COSTLY PARTS IN THE SWEEPINGS

RECLAIM WITH A MIGHTY-MITE VIBRATING SCREEN

SINGLE AND DOUBLE DECK MODELS UP TO 15 T.P.H.

Now do as many companies do to prevent profits going out in the sweepings . . . Easy to use, easy to move Mighty-Mite will pay for itself. Investigate today!

SCREEN EQUIPMENT CO., INC.
Buffalo 25, New York

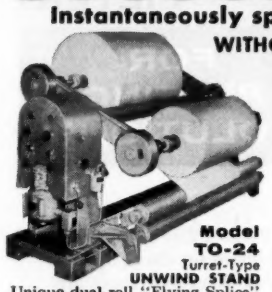
▲ For more details circle NED-523 L9 on enclosed inquiry slip ▲

NO WASTE...NO DOWN TIME
in Continuous Roll Stock Processing!

Stanford FLYING-SPLICE

TURRET-TYPE UNWIND & REWIND STANDS

Instantaneously splices on second roll WITHOUT STOPPING PROCESS



NO NEED to stop high-speed, complex web processing to make roll changes. Precision-built Stanford units accomplish these operations in a fraction of a second without interrupting production.

Fully Automatic, Semi-Automatic, or Manual action.

With or without Constant Tension Brake.

With or without Web Guide.

Ideal for Paper • Plastic Films • Foils and all other Web Materials

Model TO-24 Turret-Type UNWIND STAND
Unique dual-roll "Flying Splice" instantly attaches new roll to moving web without stopping.

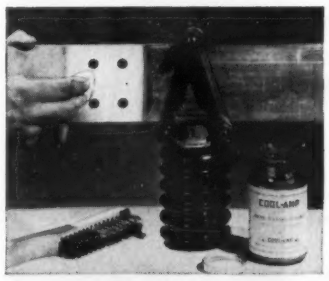
Model TO-24R Turret-Type REWIND STAND
Dual roll Turret instantly attaches moving web to new core for continuous operation.

Write, wire, or phone WAYNE STANFORD today!

Stanford ENGINEERING COMPANY
SALEM, ILLINOIS • PHONE SALEM 553
Mfrs. of Slitters, Web Guides, Rewinding and Constant Tension Equipment

▲ For more details circle NED-524 L9 on enclosed inquiry slip ▲

SILVER PLATING
"ON THE JOB" WITH POWDER



Cool-Amp Silver Plating Powder deposits a genuine coat of silver that will not peel off, and will provide lasting protection against oxidation. It has been used extensively and is accepted as equal to electroplating for bolted and stationary contacts.

Reduces Maintenance
Saves Electricity

Cool-Amp minimizes overheating and provides cool maximum conductivity for your copper, brass or bronze contacts. Used on all current carrying connections, Cool-Amp silver plating assures long life and low maintenance and will prevent series of losses from oxidation that are too small to create noticeable heat but still accumulate into major power loss. Apply to fuse clips and blades to reduce overheating.

Cool-Amp contains no cyanide and is simple to apply. It can be used by any number of people at the same time ON THE JOB in underground vaults, sub-stations and hard-to-get-at places. The only equipment needed is a sharp steel wire brush or abrasive cloth, clean rag and water.

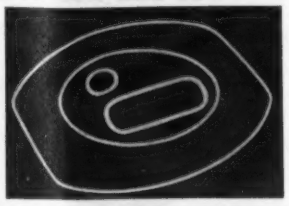
One pound will silver plate approximately 6,000 square inches.

$13.50 PER POUND SHIPPED PREPAID
WRITE FOR FREE SAMPLE AND QUANTITY QUOTATIONS

The COOL-AMP Co.
Dept. ED. 8603 S.W. 17th Avenue, Portland 19, Oregon

▲ For more details circle NED-525 L9 on enclosed inquiry slip ▲

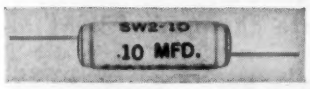
TUBULAR METAL SEAL
for high temperatures and pressures



Mild steel, stainless steel, cupro-nickel, Monel, or copper alloy are used in heavy duty Gaseal pressurized metal tube ring seals. Engineered for high pressure and high temperature sealing applications, the reusable hollow metal rings contain an inert gas under pressure, normally about 600 psi. Where extremely high pressures are involved, two or more rings can be used. Distortion from undue compression is avoided by housing the ring in a recess of the joint. Expanding and contracting with variations in temperature, the static hermetic seals can withstand up to 20,000 psi and over 1000° F. They can be fabricated to fit any joint and in any shape or size from ½ to 96 in. OD. Made by General Hermetic Sealing Corp., 99 E. Hawthorne Ave., Valley Stream, L. I., N. Y.

▲ For more details circle NED-526 L9 on enclosed inquiry slip ▲

POLYSTYRENE CAPACITORS
for 200, 400, and 600 v dc

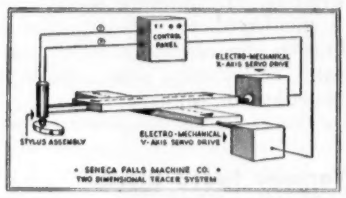


Specially processed polystyrene film is used for both dielectric and encasement in SW Frostie precision capacitors. Units feature high insulation resistance and low drift. Low dielectric absorption suits them for timing and integrating current, and high performance amplifier circuits. A complete range of capacity ratings is available with working voltages of 200, 400, and 600 v dc. Made by Potter Co., Dept. ND-5, 1950 Sheridan Rd., North Chicago, Ill.

▲ For more details circle NED-527 L9 on enclosed inquiry slip ▲

TWO DIMENSIONAL TRACER
for any contour in 360-degree path

Electro-mechanically controlled Two-Dimension Tracer system will follow any contour around a 360-degree path at constant speed, regardless of direction. Tracer is available as a package and can easily be adapted to existing machine tools. Cutting speed value can be varied manually, or automatically controlled as a function of spindle speed to maintain a constant feed rate in inches per revolution of the spindle. Rotating eccentric stylus, on contact with template, continuously feeds electrical signals to x and y axis servo drives to control table movement. System is easily adapted to computer or punched tape control. Made by Seneca Falls Machine Co., 20 Fyfe Bldg., Seneca Falls, N. Y.



▲ For more details circle NED-528 L9 on enclosed inquiry slip ▲

this NO-COST TEST OFFER has CONVINCED thousands
. . . send for YOUR FREE "TEST CAN" of C-5 "hi-temp" ANTI-SEIZE THREAD COMPOUND!

For use wherever threaded connections are subjected up to 1800F°, temperatures such as boiler, manhole, face plate studs, cylinder heads, and manifold studs or flange bolts on high temp steam lines and pumps.

Try C-5 and see why manufacturers, refiners and power producers have made it a part of their regular preventative maintenance program.

fel-pro C5 "HIGH-TEMP"

✓ Ends Seizing and Galling even up to 1800°F.
✓ Reduces Wrench Torque
✓ Ends Stud Breakage
✓ Permits Repeated Re-use
✓ Speeds Assembly and Disassembly
✓ Protects Stainless Steel at all Temperatures

1614BR

ANTI-SEIZE THREAD COMPOUND

C-5's exclusive colloidal copper formula separates mating metal threads and surfaces with cushioning, protective copper plating. C-5 prevents galvanic action and eliminates pitting even when dissimilar metals join. On mating metal surfaces, C-5 saves gaskets and countless man hours.

WRITE TODAY . . . For Your FREE Test Sample Can of C-5.

FELT PRODUCTS MFG. CO.
Dept. 68, P.O. Box 8609
CHICAGO 80, ILL.

▲ For more details circle NED-529 L9 on enclosed inquiry slip ▲

Jacketed Spring Loaded
PLUG VALVES

LONG ON SERVICE . . . SHORT ON MAINTENANCE

H & B's new fully jacketed spring loaded plug valves feature an inverted tapered plug inserted and lapped into the housing from the bottom of the valve—then spring loaded. The spring wedges the plug to a perfectly tight seal, eliminating troublesome leaks. Easy to operate—no big handwheel . . . no freeze . . . no "breaking loose" necessary. Easy to clean. Made in two port or multi port design, with any special stop arrangement desired.

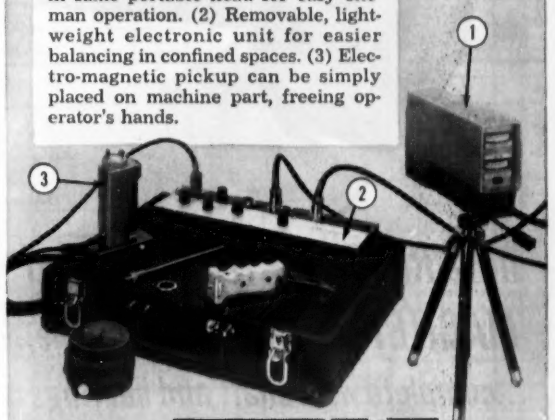
Available in 2-way or straight, 3-way or angle, also air cylinder operated—all sizes and types. Bulletin J-57 sent on request.

HETHERINGTON & BERNER INC.
745 KENTUCKY AVE. INDIANAPOLIS 7, IND.

▲ For more details circle NED-530 L9 on enclosed inquiry slip ▲

All-New Precision Stewart-Warner
Portable Balancer

Engineered for precision balancing . . . designed for ease of operation. (1) Stroboscope and meters mounted in same portable head for easy one-man operation. (2) Removable, lightweight electronic unit for easier balancing in confined spaces. (3) Electro-magnetic pickup can be simply placed on machine part, freeing operator's hands.



cuts maintenance costs by enabling you to eliminate even smallest vibrations!

Stewart-Warner's new portable balancer is priced to make it economical for even small shops to own their own balancing equipment. Its portability permits easy *in-place* balancing and vibration analysis of assembled machinery. Indicates angle and amount of unbalance . . . determines rpm and amount of vibration. Helps produce finer finishes and closer tolerances . . . aids in reducing noise and worker fatigue . . . permits quality control *before* equipment is put in operation or shipped to a customer.

Fits many applications: blowers, fans, grinding wheels, turbines, rolls, motors, cutterheads, machine tool spindles, gears, couplings, chucks, and all other rotating machinery.

Also: a complete line of permanently installed cradle type balancers to meet every job type or short run precision balancing requirement.

MAIL COUPON FOR FULL DETAILS!

Symbol of SW Excellence

STEWART-WARNER CORPORATION
INDUSTRIAL BALANCER DEPARTMENT
Dept. SS-119, 1850 Diversey Parkway, Chicago 14, Illinois
Please send me your Industrial Balancer catalogs.

Name
Company
Address
City Zone State

▲ For more details circle NED-531 L9 on enclosed inquiry slip ▲

Here's ALL YOU NEED to REPAIR your HYDRAULIC JACK!

JACK-PACK
HYDRAULIC
JACK REPAIR KITS & JACK OIL

JACK-PACK repair kits contain easy-to-follow instructions and all the packings necessary to make your jack work like new. And, be sure to use JACK-PACK hydraulic jack oil. It's the only oil with complete instructions for filling and bleeding your jack on the can.

ALL MAKES ALL MODELS

Save Money...Try a JACK-PACK!
- No more big jack repair bills.
- No more high freight charges.
- No more long equipment tie-ups.

Write today for free folder

jack pack MFG. COMPANY
2115 No. Marianna Ave., Los Angeles 32, Calif.
ORDER FROM YOUR JOBBER!

▲ For more details circle NED-532 L9 on enclosed inquiry slip ▲

First and Only Disc-Type Brake to Fulfill J.I.C. Specifications

The efficient, direct-action operating advantages of the Reuland disc-type magnetic brake are now available for the first time in this self-contained unit. Being foot mounted it can easily be coupled to existing motor or equipment shafts in accordance with J.I.C. specifications. As a standard unit it also can be purchased "off the shelf" by O.E.M.'s or added to equipment at any time by users. Available with either single or double end shaft.

ALSO AVAILABLE WITHOUT SHAFT

Reuland disc-type brakes (either end bell or foot mounted) are also available for applications where the motor or equipment shaft can be extended directly into the brake. Combined with Reuland Fluid-Shaft motors and Motoreducers they provide many additional power and brake combinations.

Please Request Reuland Magnetic Brake folder No. MB-1050

Other **REULAND** *firsts!*
- Motor with internal fluid coupling
- All-aluminum motor frames
- Spline-coupled hydraulic pump motor
- Precision motors for machine tools
- "Through-Shaft" magnetic disc brakes
- Slip Ring motors in small #66 frames

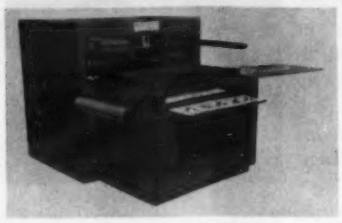
Free general catalog of the COMPLETE Reuland line of STANDARD and SPECIAL Motors sent on request.

REULAND MOTORS

REULAND ELECTRIC COMPANY
Western Division: Alhambra 25, California
Eastern Division: Howell 25, Michigan
Distributors in all principal cities

▲ For more details circle NED-533 L9 on enclosed inquiry slip ▲

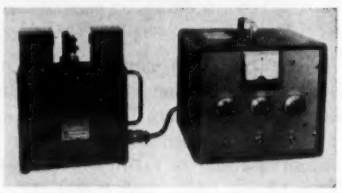
SKIN PACKAGING MACHINE has bed size of 22 x 34 in.



All manual operations are reduced to six simple motions in the Model F Skin-Pak machine, an automated skin packaging unit using Poly-on-Mylar Vacuumized film. It has a bed size of 22 x 34 in. and accommodates a film width of 25½ in. with a drape of 5 to 8 in. Heating cycle and vacuum time require a maximum of 15 sec for a complete 22 x 34-in. skin packaged board. Each board can be cut to produce multiples of individual packages, i. e., a 5 x 6½-in. size package can be run 20-up at one time. For blister or bubble packaging, both male and female molds can be utilized in a rapid, automated cycle. The Equi-Thermo heater delivers uniform heat over the film area. Made by Skin-Pak Machinery Co., 143 E. Railway Ave., Paterson, N. J.

▲ For more details circle NED-534 L9 on enclosed inquiry slip ▲

PHOTOELECTRIC GAGE measures minute changes of light



Wide variety of measurements can be made with the Dyna-Micro-Gage, a photoelectric instrument which measures minute changes of light. Typical uses include continuous gaging of wire, yarn, or thread up to ¼ in. in diameter; gaging of sheet, strip, or tape width; measurement of small hole sizes by area; detecting small changes in strength of chemical solutions or dispersions by light transmission changes; and linear measurement. It can also be used as a strain gage by measuring small deflections, as a comparator, or as an indexing or positioning device. Capable of dynamic measurements down to ½ micron or less, unit is unaffected by humidity and temperature changes. Output can operate a meter, can be recorded graphically, or actuate a relay. Made by Lindly & Co., 248 Herricks Rd., Mineola, N. Y.

▲ For more details circle NED-535 L9 on enclosed inquiry slip ▲

Variable Speed Drives

Vari-Speed Motodrives, available in capacities from ¼ to 40 hp, provide infinitely adjustable speeds within ranges of 2:1 to 10:1 from a constant-rpm alternating-current motor. 96-page Catalog M-592 describes the wide assortment of styles and modifications, and provides speed and horsepower tables, overhung load capacities, and engineering information as well. Write on company letterhead to Reliance Electric & Engineering Co., Reeves Pulley Div., Columbus, Ind.

▲ For more details circle NED-536 L9 on enclosed inquiry slip ▲

Single Lever Control Does It!

Hundreds of Leading Companies are using Bear BeKomatic Balancers to Cut Costs 3 Ways!

1. to speed production ... up to 200 parts an hour!
2. to solve personnel problems ... any unskilled worker can master in minutes!
3. to increase accuracy ... sensitivity to 20 millionths inch!

THIS FREE CATALOG SHOWS YOU HOW TO CUT COSTS ON PRODUCTION LINE BALANCING!

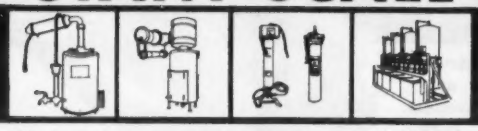
BEAR. 709

Now the Most Complete Line of Balancing Machines for PRODUCTION LINE and MAINTENANCE BALANCING
WRITE TODAY! BEAR MFG. CO., Dept. N-28, Rock Island, Illinois

▲ For more details circle NED-537 L9 on enclosed inquiry slip ▲

WATER

DISTILLED, DEMINERALIZED,
or 18,000,000 OHM PURITY?
BARNSTEAD EQUIPMENT
produces it in laboratory quantities or on a
GIANT SCALE



Whatever your pure water requirement, distilled, demineralized, or even water of 18,000,000 ohm purity, you can depend upon Barnstead for the right answer . . . the right equipment . . . Barnstead makes both . . . Stills and Demineralizers . . . and specialized equipment such as the MF® Submicron Filter . . Pure Water Specialists since 1878.

Write for Catalog "G" and Catalog 127.

Barnstead STILL & STERILIZER CO.
16 Lanesville Terrace, Boston 31, Mass.

▲ For more details circle NED-538 L9 on enclosed inquiry slip ▲

The new rubber-lined steel Fulflo Filter for plating has new swing-bolt cover to speed up changing elements. Just loosen bolts, swing them away, and lift off the cover to provide access to Honeycomb Filter Tubes. New bottom outlet allows quick, easy cleaning by addition of a "T" connection with drain valve. Six sizes for capacities up to 18,000 gph. *Write for literature to Department NE.*

COMMERCIAL FILTERS CORPORATION
Melrose 76, Massachusetts
Plants in Melrose, Mass. and Lebanon, Ind.

▲ For more details circle NED-539 L9 on enclosed inquiry slip ▲

MOTORIZED LIFT TRUCK BATTERY CHARGER ELIMINATES SPECIAL WIRING

- No special wiring required.
- Plugs into a standard 15-ampere, 60-cycle, 115 v convenience outlet.
- Long, trouble-free life.
- Convection cooled, requires no maintenance.
- No aging adjustments required.
- Can be wall or battery mounted.
- Fully automatic; portable.
- For all 12-volt hand motorized lift truck batteries, up to 660 A.H.

Write for complete details in Bulletin AR-100.

C&D AutoReg Silicon Chargers

A PRODUCT OF C&D BATTERIES DIV. THE ELECTRIC AUTOLITE CO. OF CONSHOHOCKEN, PA...ATTICA, IND.

Manufacturers of Sylver-Clad® Industrial Batteries • PLASTICELL • and PLASTIC® Batteries for Communications, Control, and Auxiliary Power • Producers of AutoReg® Silicon Chargers and AutoCal* • Charger-Battery Combinations.
*Trademark

▲ For more details circle NED-540 L9 on enclosed inquiry slip ▲

CLAIR SURFACE FINISHING MACHINES

must be outstanding!

How else could you explain that 95 Repeat Customers have purchased a total of 664

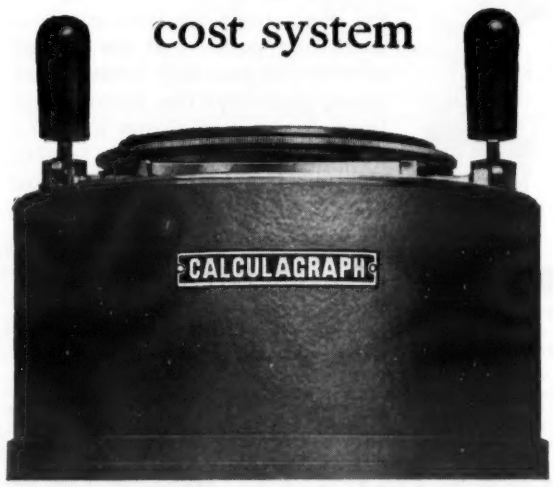
SINCE 1947

CLAIR
MANUFACTURING CO., Inc., OLEAN, N.Y.

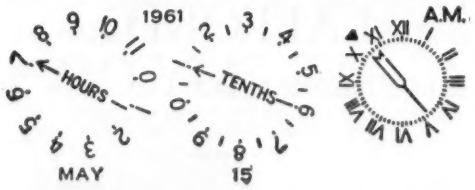
Offering the Most VERSATILE Line of Surface Finishing Machines

▲ For more details circle NED-541 L9 on enclosed inquiry slip ▲

Automatic foolproof elapsed time records for any cost system



Here's how Calculagraph, and only Calculagraph, does it!

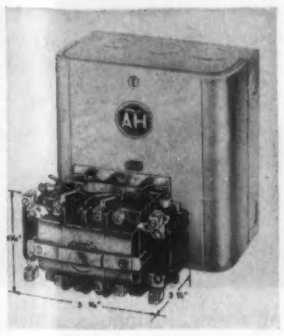


The Calculagraph computer completely eliminates time-consuming, error-producing manual computations to obtain elapsed time for labor costs. The exclusive Calculagraph principle automatically computes the "difference" in starting and finishing times and prints the elapsed time in hours and minutes or in hours and tenths (as shown). Arrows indicate the exact elapsed time. It can be "programmed", too, to subtract all "idle" time such as lunch periods, etc. No expensive changes are necessary to include Calculagraph in your cost system, regardless of what it is. Write today for complete information and enclose samples of your job tickets.

INDUSTRIAL DIVISION
CALCULAGRAPH Company 307 Sussex Street, Harrison, N. J.

▲ For more details circle NED-542 L9 on enclosed inquiry slip ▲

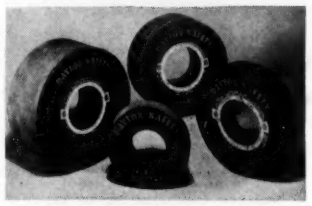
MAGNETIC STARTER
rated 10 hp at 440 and 550 v



Small-size Model 58 RA starter and contactor for NEMA 0 to 1 constant speed motors is rated up to 7½ hp at 220 v and 10 hp at 440 and 550 v. The across-the-line magnetic control features epoxy-resin encased coils with wide voltage range, general-purpose enclosure, and solderless terminals. One coil will replace three of the older type. Available are standard 60-cycle coils for 110-120, 440-480, and 550-600 v. Made by **Arrow-Hart & Hegeman Electric Co.**, 103 Hawthorn St., Hartford 6, Conn.

▲ For more details circle NED-543 L9 on enclosed inquiry slip ▲

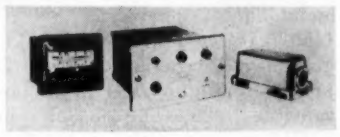
REGULATING WHEELS
for centerless grinding operations



Uniformly balanced regulating wheels for centerless grinding, made of aluminum oxide and utilizing a rubber bonding agent, permit precision grinding to close tolerances with smooth finishes and without chatter marks. They are designed for all types of centerless grinding operations. Type 1, 5, and 7 wheels are available in diameters from 8 to 14 in. Made by **Simonds Worden White Co.**, 1101 Negley Place, Dayton 7, Ohio.

▲ For more details circle NED-544 L9 on enclosed inquiry slip ▲

RADIATION THERMOMETER
measures heat without contact



Utilizing infrared detection methods, the Thermodot Model TD-3 radiation thermometer automatically measures and controls temperature of moving or stationary objects without physical contact. Applications include automated production lines and measuring heat of inaccessible product surfaces. Thermal radiation from object is translated by unit into a signal voltage and amplified to drive a temperature indicator. Sensitivity is 7° at 2000° F, and response is rapid and continuous. Small, hermetically sealed sensing element can be bolted to any surface at a given working distance and aimed at object to be measured. Unit is unaffected by ambient variations from 20 to 120° F. Made by **Radiation Electronics Co.**, 5600 W. Jarvis St., Chicago 48, Ill.

▲ For more details circle NED-545 L9 on enclosed inquiry slip ▲

FOR THE LIFE OF YOUR PRODUCT
BRADY Self-Bonding NAMEPLATES

Poly-Plates — Add new color, new beauty, new *Life* to your products with Brady self-bonding Poly-Plates. Give you unlimited freedom in nameplate design. Made of Miracle Mylar* for scratch, scuff, acid and solvent resistance. Permanent sub-surface printed. Sparkling gold or silver metalized. No screws, rivets, heat or activators needed to apply. Stay bright, clean, legible — *for the Life of Your Product.*

*DU PONT'S REGISTERED TRADE MARK

LADY SCHICK

QUIK-PLATES

Colorful Anodized ALUMI-THIN Nameplates with permanently etched printing.

BRADY-CALS

Pressure-sensitive, Super-thin Vinyl Nameplates, Top-surface Printed . . . Enduro-Kote Over-coating protected.

WRITE FOR INFORMATION AND FREE TESTING SAMPLES

W. H. BRADY CO., 764 West Glendale Ave., Milwaukee 9, Wis.
Manufacturers of Quality Pressure-Sensitive Industrial Tape Products, Self-Bonding Nameplates, Automatic Machines for Dispensing Labels, Nameplates, Masks and Tape • Est. 1914.
In Canada: W. H. BRADY CO. OF CANADA, LTD. 95
1 Research Road, Brampton, Ontario, Phone Glendale 1-4420

▲ For more details circle NED-546 L9 on enclosed inquiry slip ▲

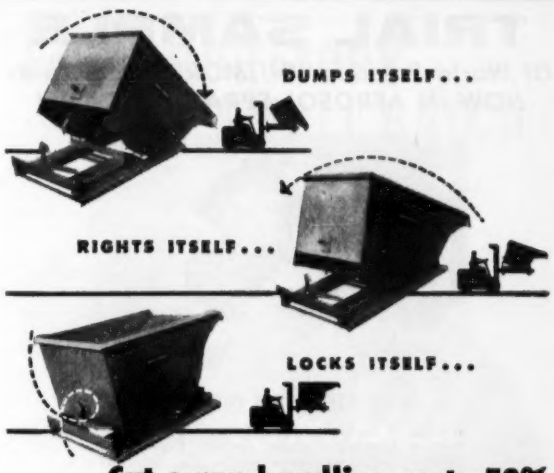
DOUBLE DIE-LIFE, DOUBLE PRODUCTION OUTPUT
with versatile Henry & Wright Double Crank Dieing Machines

► Form larger parts on lower tonnage machines. Greater precision with assured longer die life. About half the height of conventional straight side presses. Motor driven recirculating lubrication system. Main bearings are thermal-switch protected against overheating. Air-pressure roll feed. Dies can be changed from front or rear without touching roll feed. Handles off-center loading with minimum die wear.

The most versatile, automatic stamping and forming machine on the market

THE HYDRAULIC PRESS MFG. COMPANY
A Division of Koehring Co., Mount Gilead, Ohio, U. S. A. H917

▲ For more details circle NED-547 L9 on enclosed inquiry slip ▲



Cut scrap handling costs 50%

Hundreds of industries are now using Roura Hoppers instead of barrels or tote boxes to collect scrap metal. They're placed alongside machines or in strategic locations. When full, lift truck operator picks up loaded hopper . . . transports it to scrap bin or freight car . . . flips the latch . . . and the hopper automatically dumps its load, rights itself, locks itself.

Roura Hoppers are made in five sizes, ½ to 2 yard capacities. Built of ⅛" steel plate with continuous arc-welded seams. Also available in stainless steel or galvanized. Mounted on live skids or a choice of wheels. Standard models available for immediate shipment.

Write today for more information. ROURA IRON WORKS, INC. 1415 Woodland Avenue, Detroit 11, Michigan.

ROURA *Self-Dumping* **HOPPER**

▲ For more details circle NED-548 L9 on enclosed inquiry slip ▲

BUILD YOUR OWN SCHROEDER HYDRAULIC BARREL TEST BENCH

Easy-Flexible-Low Cost

The Schroeder Portable Hydraulic Circuit Tester now teams up with the newly-designed Schroeder Bench Table to provide fast, accurate, and complete test bench instrumentation. Yet, the Tester may be removed from the Bench quickly for troubleshooting in the field or in the shop.

Schroeder Bench Table serves as work area and support for Tester, valve test bracket and filters. A barrel supports the Table and acts as a reservoir for the Bench.

Schroeder Valve Testing Header added to Barrel Bench speeds up valve and cylinder testing; provides quick disconnects and valving for faster, efficient operation.

We will gladly assist you in determining your Bench requirements—write today for the Schroeder "Test Bench Questionnaire."

SCHROEDER BROTHERS
CORPORATION
Nichol Ave. • Box 72
McKees Rocks (Pittsburgh District), Pa.

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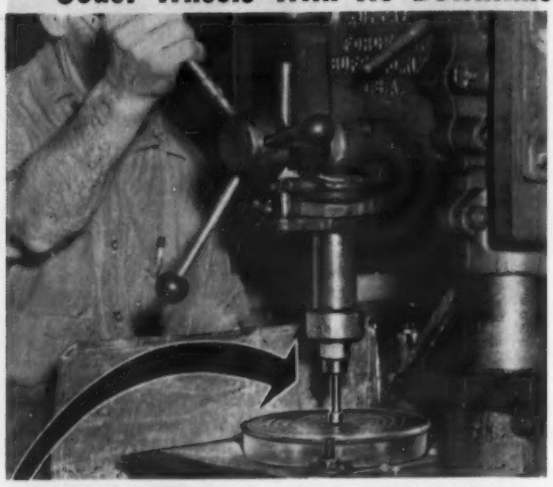
One Hoffman Bit Drills Up to 15,000 Godet Wheels With No Downtime



Up to 15,000 Godet Wheels drilled with center hole tolerance 1.5 min. to 1.53 max.—with one Hoffman Laboratory Bit. Actual production figures that are being duplicated by many Hoffman Bit users for precision drilling of glass, ceramics, quartz, etc. Diamond impregnated or oriented surface set.

Write for Illustrated Literature and Prices—FREE

HOFFMAN BROS. DRILLING CO.
SINCE 1902
106 Cedar Street PUNXSUTAWNEY, PENNA.

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TRIAL SAMPLE

Of World-Famous WHITMORE'S Lubricants NOW IN AEROSOL SPRAY-ON CANS!

WIRE ROPE SPRAY LUBRICANT

Exclusive formulas for lubricating and protecting wire rope, chain, springs. Penetrates to the core of wire rope minimizing internal friction and increasing usable life up to 300%—special protective qualities absolutely eliminate corrosion—non-gumming qualities reduce "carry-back"—packaged in handy 16 oz. aerosol spray-on containers or in bulk containers—send for a free trial sample.

65 YEARS OF LEADERSHIP
LUBRICATING THE FOLLOWING:

- Open Gears, Dipper Sticks, Cams
- Hydraulic Units, Torque Converters
- Speed Reducers
- Enclosed Gear Cases
- Roller, Ball, and Sleeve Bearings
- Wire Rope and Cable

Est. 1893
THE WHITMORE MANUFACTURING CO.
LUBRICATING ENGINEERS
CLEVELAND 4, OHIO, • VULCAN 3-7272

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NEW AIRETOOL PNEUMATIC SCREWDRIVERS, NUTSETTERS

THE LATEST IDEAS IN PRODUCTION TOOLS. New design, new engineering, new performance. Both reversing and non-reversing models, straight and pistol-grip types. All are available in a choice of 4 operating speeds. It will pay you to get full information about these important new additions to the Airetool line. Write for Bulletin 68. Airetool Manufacturing Co., Springfield, Ohio.

BRANCH OFFICES: New York, Chicago, Tulsa, Philadelphia, Houston, Baton Rouge

REPRESENTATIVES in principal cities of U.S.A., Canada, Mexico, South America, England, Europe, Puerto Rico, Italy, Japan, Hawaii

EUROPEAN PLANT: Vlaardingen, The Netherlands

CANADIAN PLANT: Brantford, Ontario

AIRETOOL MANUFACTURING COMPANY SPRINGFIELD, OHIO

30 years experience in pneumatic tools

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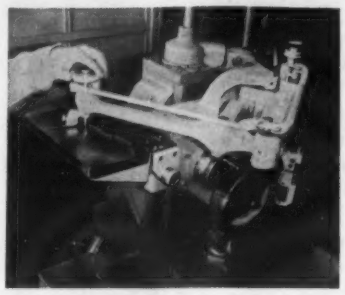
WHEEL FORMING ATTACHMENT has tracer controlled pantograph



Added to line of Diaform wheel forming attachments, this Model 5 is easily mounted on spindle head of toolroom surface grinders. Path of tracer moved over a simple template is transmitted at a 5:1 or 10:1 reduction ratio to truing diamonds which form true grinding wheel to within a few ten thousandths of desired shape. The swiveling diamond spindle is a tandem type with one diamond for semifinishing and the second for finish truing. Model 5-1 for grinders with 6 x 18-in. table working surface form-trues 7-in. diameter by 1-in. face wheels. Model 5-2, for machines with 8 x 24-in. surface, trues wheels up to 10 x 2 in. Made by **Pratt & Whitney Co.**, 20 Charter Oak Blvd., West Hartford 1, Conn.

▲ For more details circle NED-554 L9 on enclosed inquiry slip ▲

10-IN. BENCH SAW with 3⅛-in. depth of cut

Cast iron trunnions, cradle, and saw arm on this Atlas 10-in. portable bench saw assure accurate blade alignment at every height, angle, and cutting load. Powered by continuous-duty ¾ or 1-hp totally - enclosed motor, the heavy-duty tilt arbor saw is suitable for small parts production, pattern, cabinet, and maintenance shops. Unit features double locking lift-off fence, large miter gage keyed to table for up to 25-in. cut-off capacity, precision ground steel arbor, and permanently-lubricated bearings. The 20 x 27½-in. table measures 59½ x 27½ in. with two grill-type extensions. With blade at 90 degrees, depth of cut is 3⅛ in.; at 45 degrees, it is 2⅛ in. Made by **Atlas Press Co.**, 2013 N. Pitcher St., Kalamazoo, Mich.

▲ For more details circle NED-555 L9 on enclosed inquiry slip ▲

Helical Gear Speed Reducers

Link-Belt Co.—All of company's expanded line of In-Line helical gear speed reducers are consolidated in 20-page book 2751. Data cover 20 sizes comprising 6.2:1 through 38.4:1 double reduction ratios, 47.1:1 through 292:1 triple reduction ratios, and 195:1 through 2217:1 quadruple reduction ratios. Units range up to 206, 44, and 3.08 hp, respectively.

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Higher Vacuum ... Suction ... Pressure with Smaller LEIMAN AIR PUMPS

Exclusive Hinged Vane Design provides 2 to 3 times more air space per size and weight of pump

Leiman simplified design has fewer moving parts. All parts made of durable cast iron and steel (not composition). Take up their own wear to give "lifetime" service. No gaskets or packing—no tips to renew—no troubles—little maintenance. Quiet operation. Every pump tested. Wide range of models and sizes in Vacuum to 29.9" hg., Pressure to 20 psig., Volume to 162 cfm. Write for 16-page Catalog and Application Book showing dozens of "how-to-do-it" blueprints.

LEIMAN BROS., Inc., 167 Christie St., Newark 5, N. J.

LEIMAN Rotary Positive AIR PUMPS

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WELDERS! push this button and save!

. . . as much as 30% on fuel gas! . . . as much as 10% on oxygen . . . and 16% on labor in typical case history!

It's *SMITH'S money-saving gas control unit*—ideal for flame cutting, welding, silver soldering, production brazing . . . any job that takes a high pre-heat flame to start and a lower flame to finish. Also ideal as a shut-off valve for inert gas welding! Unit works on a solenoid-operated valve . . . plugs into any 110 volt line. Use with as many as 8 machine cutting torches (pays for itself over and over again). For maximum convenience, order with either a hand or foot operated remote control. Send today for complete information:

SMITH'S
PUSH-BUTTON GAS CONTROL
SMITH WELDING EQUIPMENT CORPORATION
2633 Fourth Street, S.E., Minneapolis 14, Minn.

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Shorten the Pumping Time Between 10^{-2} and 10^{-6} mm Hg-

Kinney®

HIGH SPEED AND FRACTIONATING OIL DIFFUSION PUMPS

KINNEY Oil Diffusion Pumps offer the direct route for increasing the mean free path – and the over-all efficiency of your high vacuum operations generally! The unique multi-jet principle in these KINNEY Diffusion Pumps contributes notable advantages in high operating speed and low back streaming rates. Write for Bulletins 3270.1 and 3290.1 today.

KINNEY MFG. DIVISION
THE NEW YORK AIR BRAKE COMPANY
3612L WASHINGTON STREET • BOSTON 30 • MASS.

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I'M NOT EASILY CONVINCED.

I know that I am paying TOO MUCH for tube bending "BUY OUTS" but how can I AFFORD a precision tube bending machine of MY OWN?

A LESS OBSTINATE MAN WOULD IMMEDIATELY WRITE FOR THE ALL CONVINCING FACTS ABOUT THE LEONARD BENDMASTERS

LEONARD PRECISION PRODUCTS CO.
9200 BOLSA AVE. SANTA ANA, CALIFORNIA

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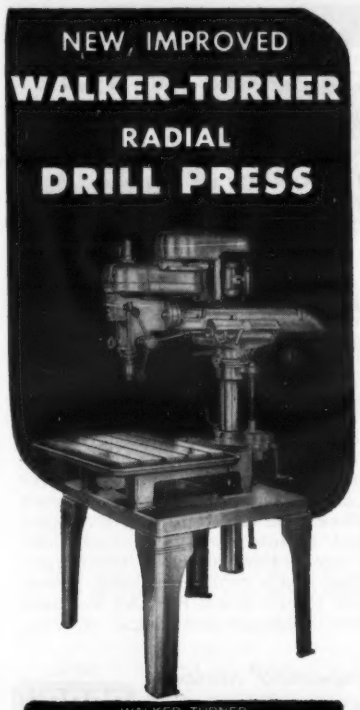
NEW, IMPROVED
WALKER-TURNER RADIAL DRILL PRESS



- STRONGER
- MORE VERSATILE
- EASIER TO OPERATE

With its all-new, heavy-duty head assembly, the improved Walker-Turner radial drill press *offers all the ruggedness, versatility and efficiency of larger machine tools costing several times as much.* Available in 24 models with either 4¼" or 6" spindle travel.

FREE CATALOG— write to Rockwell Manufacturing Company, Walker-Turner Division, WL-45, N. Lexington Ave., Pittsburgh 8, Pa.

WALKER-TURNER LIGHT-HEAVYWEIGHT MACHINE TOOLS
another fine product by
ROCKWELL

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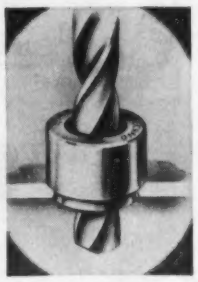
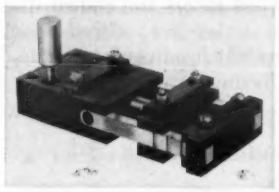
DRILL BUSHINGS for 3/16 and ¼-in. plates



Two additional sizes are offered in Flar-A-Lock drill bushings. Size C and D grips for installation in 3/16 and ¼-in. metal tooling plate thicknesses supplement Size A and B grips for 1/16 and ⅛-in. plates. Bushings are selectively heat treated on all wear surfaces and are concentrically installed with a hammer and hand flaring tool. Made by **Techno-Products Corp.**, 407 Baily Rd., Yeadon, Pa.

▲ For more details circle NED-564 L9 on enclosed inquiry slip ▲

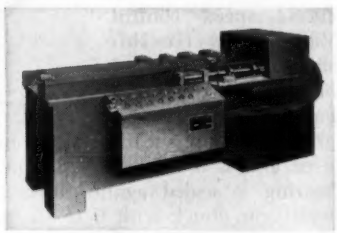
PUNCH PRESS FEEDS repeat accurate within 0.0005 in.



Designed to feed stock 1½ in. wide in thicknesses from 0.003 to 0.050 in., two Rapid-Air punch press feeds will repeat accurately within 0.0005 in. without the use of pilots. Units operate on 75 to 150-psi air and mount on die set or bolster. Both are 3 in. wide with maximum height of 3½ in. The 5½-lb Model A-2 has 0 to 2-in. stroke, maximum speed of over 200 strokes per minute, and is 7½ in. long. Model A-4, weighing 7½ lb, has 0 to 4-in. stroke, speed of 150 strokes per minute, and has over-all length of 9½ in. For delicate stock, nylon faced clamps are available. Made by **Mechanical Tool & Engineering Co.**, 2323 23rd Ave., Rockford, Ill.

▲ For more details circle NED-565 L9 on enclosed inquiry slip ▲

AUTOMATIC SAW for aluminum and brass stock

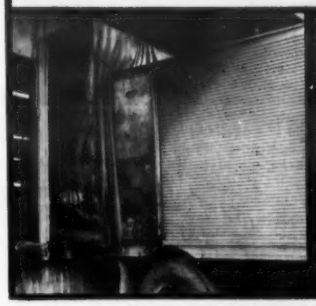


High production cutting of aluminum and brass extrusions, bar stock, and tubing is function of the Model V-4 automatic circular saw. It has a 4 x 4-in. capacity and will cycle from 1 to 20 times per minute. Machine can be set up to feed automatically by holes or other characteristics stamped into the materials. Once set, operation is automatic. Manual pushbuttons are used for setting up. Pilot lights indicate individual steps within the automatic cycle. A large chip drawer is easily removed for cleaning. A 5-hp motor drives the guarded 16-in. circular blade at a speed of 7000 rpm. Coolant capacity is 5 gal, and the hydraulic reservoir holds 30 gal. Conveyor table is an accessory. Made by **W. F. Wells & Sons**, Three Rivers, Mich.

▲ For more details circle NED-566 L9 on enclosed inquiry slip ▲

STOP EXPENSIVE HEAT LOSS,
ACCIDENTS AND WEATHER DAMAGE AT YOUR TRUCK DOCK AREA WITH
FROMMELT DOCK SHELTERS
Pat. No. 2892463

The simple, low-cost installation of Frommelt Dock Shelters can make your dock area snug and weather tight while loading or unloading . . . save costly heat . . . keep workers comfortable . . . and, protect merchandise from rain, snow, and freezing weather. One-man operation in seconds. Rugged frame and tough fabric need little maintenance . . . last for years! There's a size and type just right for your dock needs.



WRITE FOR NAME OF NEAREST CAR-DOX DISTRIBUTOR, CATALOGS, AND PRICES TODAY!
FROMMELT
FROMMELT INDUSTRIES
DUBUQUE, IOWA

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MORE THAN BASIC

Eaton-Reliance fasteners do more than just hold parts together — they cut assembly costs, improve product quality, simplify design. If you fasten parts together, it will be worth your while to investigate the Eaton-Reliance line of engineered industrial fasteners. Write for General Catalog.

EATON — RELIANCE DIVISION — MANUFACTURING COMPANY
509 Charles Avenue • Massillon, Ohio
SALES OFFICES: NEW YORK • CLEVELAND • DETROIT
CHICAGO • ST. LOUIS • SAN FRANCISCO • LOS ANGELES

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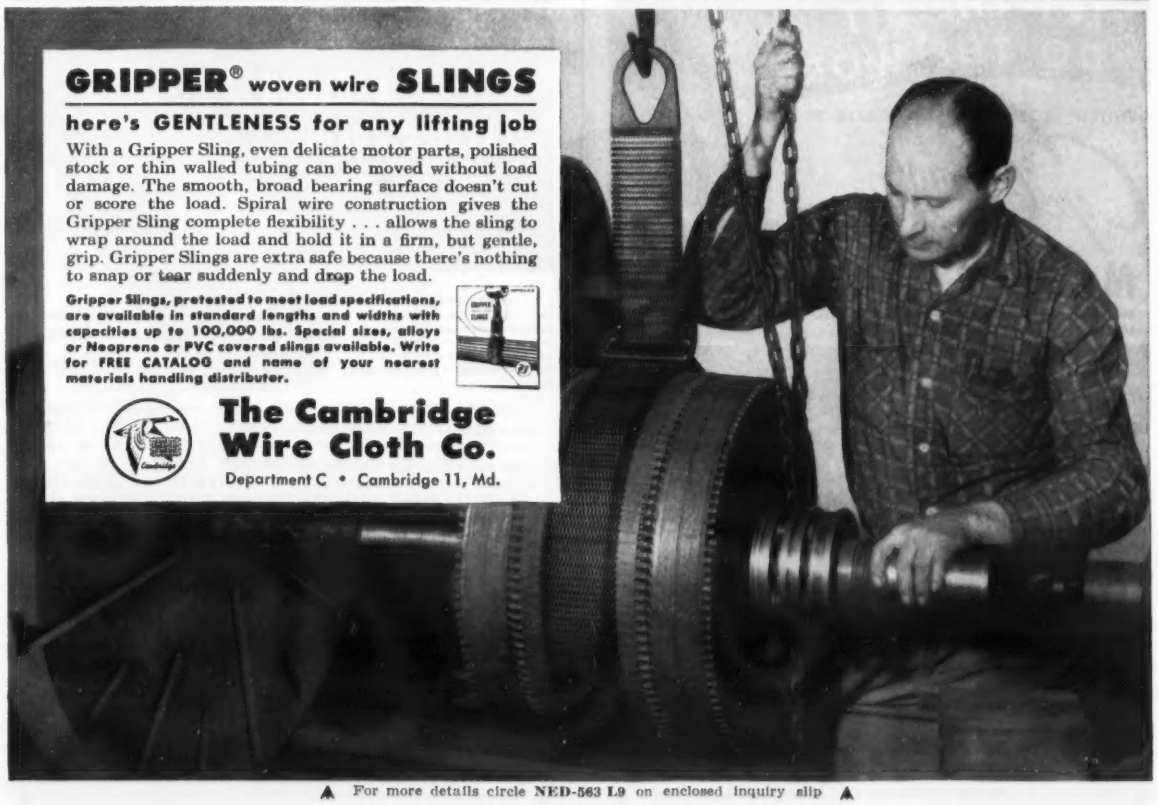
GRIPPER® woven wire SLINGS
here's GENTLENESS for any lifting job

With a Gripper Sling, even delicate motor parts, polished stock or thin walled tubing can be moved without load damage. The smooth, broad bearing surface doesn't cut or score the load. Spiral wire construction gives the Gripper Sling complete flexibility . . . allows the sling to wrap around the load and hold it in a firm, but gentle, grip. Gripper Slings are extra safe because there's nothing to snap or tear suddenly and drop the load.

Gripper Slings, pretested to meet load specifications, are available in standard lengths and widths with capacities up to 100,000 lbs. Special sizes, alloys or Neoprene or PVC covered slings available. Write for FREE CATALOG and name of your nearest materials handling distributor.

The Cambridge Wire Cloth Co.
Department C • Cambridge 11, Md.



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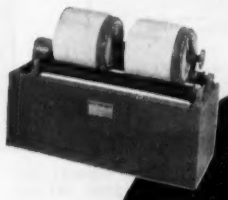
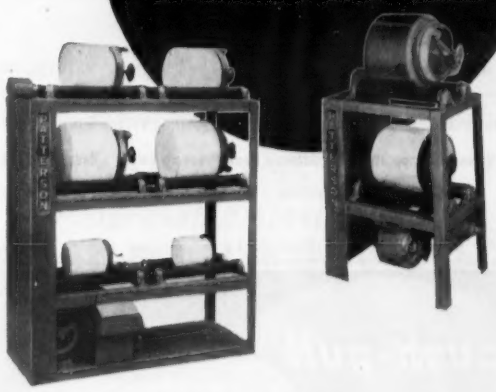
For LABORATORY and SMALL BATCH mixing and grinding



• STURDY
• LOW COST

Patterson Dura-Mills



Patterson DURA-MILLS offer top values in quality, simplicity, safety and operating convenience at low cost. Fully portable, compact, with welded frames and extra powerful roller chain drives, these modern jar mills are smooth-running, keep jars always centered on the rollers, and have oversize Oilite bearings. Wide range of models. Details in free bulletin.

LUMAROL MILL JARS

Special alumina-content high fired porcelain jars give twice the wear of ordinary jars— far less contamination per batch.
½ pint to 6½ gals.

THE *Patterson* FOUNDRY AND MACHINE COMPANY
A Division of Ferro Corporation
East Liverpool, Ohio

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Cuts Bending Costs

AS MUCH AS **50%**

• NEW PINES 3T PRESS •

Makes Bends Progressively To Varied Angles In Multiple Planes

Quality bends at production speeds that are 2 to 3 times faster than conventional methods, are now possible with the new Pines 3-T Bending Press. Many tubular parts in sizes ranging up to 1" O.D. are now formed at net speeds in excess of 1000 bends per hour. Up to 9 different bend angles can be produced in a single setup. Adjustable automatic indexing stops accurately control depth of ram stroke. Open tooling area permits rapid progressive bending in varied planes. High production speed is just part of the story. Unusually smooth, good looking bends are also produced to meet the quality demands of automotive, furniture, toy, office equipment, and appliance manufacturers. Wing dies are designed to move in ways as a bend is made, and their pivoting action is hydraulically cushioned through bearing-mounted rocker arms. This principle eliminates scratches or draw marks and produces wrinkle-free bends with very little distortion.

FREE DATA SHEETS Get the complete cost cutting story on this Press today. Larger models for tubes to 2" O.D. available.

PINES ENGINEERING CO., INC. (Specialists in Tube Fabricating Machinery) 437 WALNUT • AURORA, ILLINOIS

PRODUCTION BENDING • DEBURRING • CHAMFERING MACHINERY

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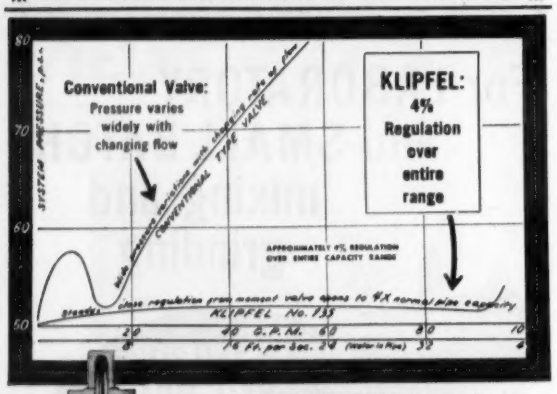

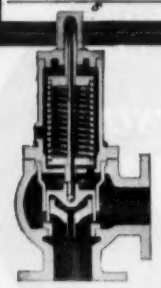

CLOSER REGULATION high capacity, too with KLIPFEL BACK PRESSURE VALVES

Klipfel No. 135 Back Pressure Valves are ideal for original equipment installations and are used with any clean fluids for pressures from 5 to 300 lbs.

Klipfel Cup Disc Valves provide excellent regulation at all rates of flow. Upstream pressure rise is a fraction of that with conventional valves. Capacity is 4 times that of a pipe of the same size.

FREE: Write for Bulletin 454 containing complete information on Klipfel Back Pressure Valves.

HAMILTON • OHIO **Klipfel** VALVES, INC.

Automatic Temperature-and-Pressure-Regulating Valves Since 1902

Float Valves • Temperature Regulators • Back Pressure Valves • Reducing Valves

A DIVISION OF THE HAMILTON-THOMAS CORPORATION

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push-pull CONTROLS

Compression & Tension Type

Aircraft cable is strung with spherical steel shells in a rigid or flexible housing sealed with "O" rings. 3" standard bend radius. ¾" minimum bend radius.

Three Types:

1. *Light Duty*—Compression Ult. Load 1250 lbs.; Ult. tension 960 lbs.
2. *Heavy Duty*—Compression Ult. Load 1650 lbs.; Ult. tension 960 lbs.
3. *Extra Heavy Duty*—Compression Ult. Load 3050 lbs.; Ult. tension 3900 lbs.

Positive remote controls for actuating mechanical, hydraulic or other devices. Eliminate bell cranks, pulleys and dual cables. U. S. Patent No. 2441719. All world rights reserved. Send for ENGINEERING MANUAL No. 1551 giving complete specifications covering materials, finishes, capacities. Please address Dept. NED-59

SOUTHWEST PRODUCTS CO.
1705 SO. MOUNTAIN AVE., MONROVIA, CALIFORNIA

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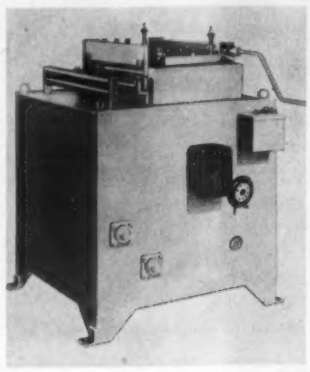
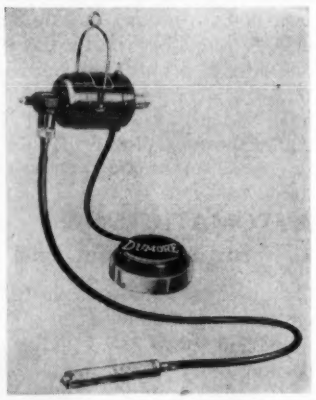
FEEDER-STRAIGHTENER for up to 50-in. wide stock



Combination feeding and straightening machines will feed up to 50-in. wide coiled, flat, or strip stock in uniform, controlled lengths up to 60 in. per feed, simultaneously passing the stock through powered rolls which take out any curl or camber. Machine is available with either one or two electromagnetic drive clutches controlled by a measuring timer. The two-clutch unit achieves greater feed accuracy by reducing feed speed to 1/7 of setting, just before the end of the feed stroke. Two machine styles are offered—one having a variable speed drive which adjusts to the desired feed rate; the other having a fixed rate feed. Made by **Benchmaster Mfg. Co.**, 1835 W. Rosecrans Ave., Gardena, Calif.

▲ For more details circle NED-572 L9 on enclosed inquiry slip ▲

FLEXIBLE SHAFT GRINDER speeds from 500 to 15,000 rpm



Speeds from 500 to 3500 rpm at the geared end and from 3000 to 15,000 rpm at the direct drive end are provided by 1/15-hp universal type motor of the Duo-Flex flexible shaft hand grinding tool. Foot - operated rheostat provides accurate speed control. Vibrationless flexible shaft operates through bronze liner in 36 in. long moisture and grease-resistant sheath. Metal handpiece weighs only 6 oz and is 5 in. long and 1 in. in diameter. Front bearing is sealed against dirt. Grinder is furnished with gear chuck with 0 to ⅛ in. capacity. Made by **Dumore Co.**, 1300 17th St., Racine, Wis.

▲ For more details circle NED-573 L9 on enclosed inquiry slip ▲

Fork Lift Trucks

Allis-Chalmers Mfg. Co., Engine-Material Handling Div.—16-page Brochure BU-451A is a pictorial review of the FT Series of fork lift trucks. Series features unobstructed driver compartment, automotive type frame, accessibility for servicing, heavy-duty industrial engine, and torque converter.

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LET THE BIT DO THE WORK..

SWITCH FROM STEEL STAR DRILLS TO...

Cyclo-twist® ROTARY CARBIDE-TIPPED

MASONRY BITS

Drill more holes with less effort and at less cost because they're...

THE ONLY BITS WITH ALL THESE BETTER-DESIGN FEATURES:

Designed, Engineered, and Proven for the Job. COPIED, BUT NEVER EQUALED!

1. No Carbide Hangover
2. Copper-Brazed Carbide Tip Gives Longer Bit Life
3. Ground Cutting Edges
4. Spiral Flutes Assure Positive Dust Removal
5. Heat-Treated, High Quality Alloy Steel

SIZES: ¼" to 1½" diameter. Extra lengths up to 36".

Stop drilling the hard way! Send for FREE copy of "MASONRY BIT SELECTOR GUIDE".

New England CARBIDE-TIPPED MASONRY BITS

NEW ENGLAND CARBIDE TOOL Co., Inc.
55V Commercial St. Medford 55, Mass.

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Take Your Pick

OF THESE BROOK A.C. MOTORS

EITHER WAY YOU WIN!

THE Open Drip Proof NEMA Rerate Motor occupies less space— weighs 12 to 15% less than the Open Drip Proof Motor in the old frame. This is no case of "Riding horse versus draft horse"—both motors have equal stamina. Some prefer the old frames, especially where space is no factor. Brook warehouses coast-to-coast carry both types in stock. You can't find a better motor at any price, yet Brook Motors cost substantially less, because of volume production, modern techniques, world-wide distribution and a realistic pricing policy. Brook Motors available from 1 to 600 H.P. All standard enclosures. Write for literature and name of your Brook Dealer.

world's most respected motor

BROOK MOTOR CORP.
3302-04 W. Peterson Ave., Chicago 45, Illinois
In Canada: Brook Electric Motors of Canada, Ltd. 250 University Ave., Toronto, Ontario

SINCE 1904 BROOK MOTOR CORPORATION

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PRESSURE SENSITIVE TRANSFER FILM

An instant bonding medium for the temporary or permanent bonding of a full variety of porous and non-porous materials. Double-Face is a translucent adhesive film reinforced by a non-woven tissue and supported for shipping handling and storage by a release-coated protective paper. More versatile than a single or double coated tape.

- 72 linear yard rolls in widths ⅛" up to 54"
- Conforms to irregular surfaces
- Permits better bond of porous surfaces
- Can be slit or die cut with release paper in place
- High-speed applicator available
- Dry-edge release paper available in some widths

Write for free literature and sample.

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INTERCHEMICAL CORPORATION
Finishes Division
120 Potter St., Cambridge 42, Mass. Midwestern Plant: Huntington, Indiana

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. . . Introduced to the packing industry by Garlock and produced on special braiding machines by the most experienced operators. Only Garlock can give you Lattice-Braid.

*Registered Trademark

Lattice-Braid is the greatest improvement ever made in braided packings. In its construction, each strand passes diagonally through the body of the packing at a 45° angle. This through-and-through braiding makes a completely unified structure of greater strength. Ordinary braided packings become worthless once the single outer strands are worn through. On Lattice-Braid, there is no single outer braid; thus, it holds together far beyond the limits of other packings.

Consult your nearest Garlock representative about the advantages of Lattice-Braid packings. Call him, or write for Folder AD-131. THE GARLOCK PACKING COMPANY, Palmyra, N. Y. For prompt service contact one of our 26 sales offices and warehouses throughout the U. S. and Canada.

GARLOCK

Packings, Gaskets, Oil Seals, Mechanical Seals, Molded and Extruded Rubber, Plastic Products

Canadian Division: The Garlock Packing Co. of Canada Ltd., Plastics Division: United States Gasket Company

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1001 USES! SPACER TUBES

(Sleeves, Bushings, Ferrules)

Save Money on Many Jobs!

Investigate the substantial savings possible with rolled, split steel spacer tubes. They replace costly pipe, tubing or machined parts, eliminate cut-off or de-burring time, come ready for assembly, to your exact dimensions. Now saving money on thousands of applications from cars to phonographs, bicycles to chain hoists!

FREE CATALOG

Shows wide range of standard sizes, also special features that can be included. Write for your copy today!

FEDERAL-MOGUL DIV.

Federal-Mogul-Bower Bearings, Inc.

11079 SHOEMAKER, DETROIT 13, MICHIGAN

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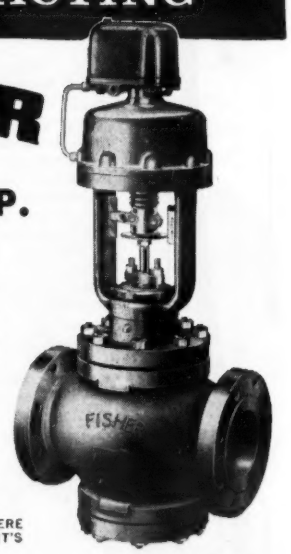
ACCURATE and FAST ACTING



FISHER

TYPE

470 P.O.P.

Delivers same power in either direction at any point of the stroke. Adaptable to virtually all types of valve bodies including Butterfly valves. No air set required—utilizes clean, noncorrosive air or gas up to 150 psi. Easily reversible actuator can be changed in the field.

IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD . . . CHANCES ARE IT'S CONTROLLED BY . . .

FISHER GOVERNOR COMPANY

Marshalltown, Iowa / Woodstock, Ontario / London, England

BUTTERFLY VALVE DIV., CONTINENTAL EQUIP. CO., CORAPOLIS, PA.

FISHER® Controls

SINCE 1880

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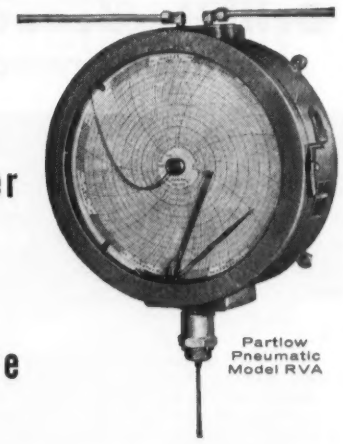
NOW!

Accurate Hair-Trigger Response in a Pneumatic Temperature Control!



Partlow Pneumatic Model RVA

Partlow's new pneumatic temperature control couples the powerful, direct action of mercury to that of a simple, air-operated valve system. Accurate to 1% of scale. Range: -30° to 1100° F. Rugged and explosion-proof—no electronic gadgets to go awry. Has adjustable throttling range; easy on-the-spot maintenance.

For details write Dept. N-119

The Partlow Corporation, New Hartford, N. Y.

PARTLOW

TEMPERATURE CONTROLS

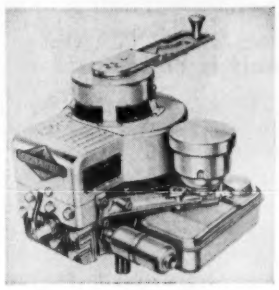
▲ For more details circle NED-581 L9 on enclosed inquiry slip ▲

LOAD LIFTING DEVICES offered in various types and sizes

Grip Lifter line of below-the-hook load gripping devices includes plate lifting clamps, tongs, hooks, and grips. Five types of plate lifting clamps are made in 1000 to 40,000-lb capacities. Three are vertical type with a cam gripping action, chain or shackle connection, and a safety lock. One is a horizontal type with cam gripping action, and the fifth is a set screw type for vertical and horizontal use. Six types of tongs are available for handling wood or metal crates and boxes, pipe and round bars, rails, beams, wooden beams and logs, and barrels and drums. Two types of box hooks and a trip hook, plus grips for handling of barrels, drums, kegs, and boxes complete the line. Made by **Manning, Maxwell & Moore Inc.**, Shaw-Box Crane & Hoist Div., Muskegon, Mich.

▲ For more details circle NED-582 L9 on enclosed inquiry slip ▲

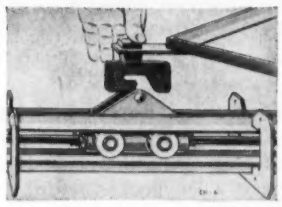
WINDUP STARTER for vertical shaft engines to 3 hp



Shock-Free windup starter is available on Briggs & Stratton vertical shaft engines up to 3 hp. To operate, engine flywheel is first locked to prevent rotation, then spring is wound up with crank which is shown extended for winding. After spring is wound 5½ turns, lock is released and spring energy cranks the engine. A safety escapement pawl is incorporated with spring so that handle cannot turn backward. Provision is made to padlock flywheel in foolproof position. Made by **Briggs & Stratton Corp.**, 2711 N. 13th St., Milwaukee, Wis.

▲ For more details circle NED-583 L9 on enclosed inquiry slip ▲

CHAINLESS CONVEYOR tows 1000-lb gross weights



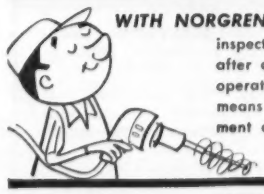
This tow-type chainless conveyor for in-the-floor, on-the-floor, or overhead installation will tow gross weights of 1000 lb or more when used with standard or specially built floor trucks. Tow-bar attached to front axle of truck manually engages trolley. In-the-floor installations are covered by metal floor plate except for narrow slot in which tow bar travels. Made by **American MonoRail Co.**, Conveyor Div., Fourth & Franklin Streets, Tipp City, Ohio.

▲ For more details circle NED-584 L9 on enclosed inquiry slip ▲

TESTS PROVE Air Tools Operate Over 20 TIMES LONGER Lubricated with Norgren MICRO-FOG®

Air operated screw drivers were tested under identical simulated working conditions.

WITHOUT LUBRICATION, complete failure occurred after an equivalent of only 10 weeks of operation!



WITH NORGREN MICRO-FOG LUBRICATION inspection showed *only slight wear* even after an equivalent of over *4 years* of operation—over 20 times longer. This means a big saving in air tool replacement costs.

If it's Norgren . . . It's Dependable.

WRITE FOR LITERATURE **C. A. NORGREN CO.**

3405 SO. ELATI STREET • ENGLEWOOD, COLORADO

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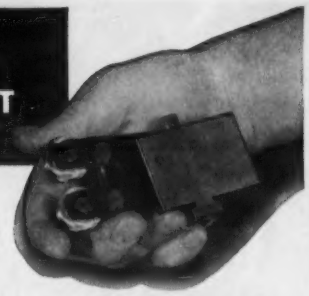
ROLL PRECISION THREADS AT LOW COST



on a No. 00 Brown & Sharpe Automatic with the PRECISION-ROL Attachment, Model 250

FEATURES

- Rolls up to ½" of threads from No. 0-80 to ¼-20
- No changes in the machine necessary
- Eliminates "Bump Rolling"
- Rolls easily changed and adjusted for size
- Easy to match rolls accurately to produce correct thread form
- Rolls automatically position themselves relative to spindle axis or work contact
- Lateral float of the head minimizes side pressure on rolls
- Synchronous roll rotation assured by positive gear train connection

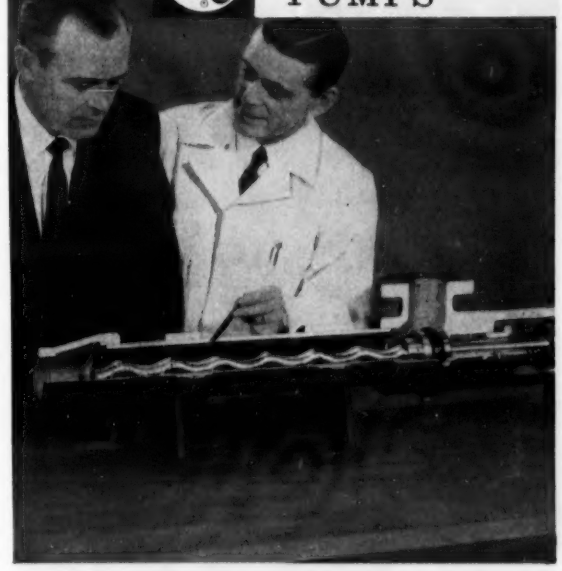
For further information write to The Sheffield Corporation, Dayton 1, Ohio, U.S.A., Dept 13

the SHEFFIELD corporation of Bendix Aviation

manufacture and measurement for mankind 8115

▲ For more details circle NED-586 L9 on enclosed inquiry slip ▲

R&M MOYNO® PUMPS



Let MOYNO'S® "Progressing Cavities" Cut Pump Maintenance Costs!

MOYNO's unique *"progressing cavity"* principle cuts pump maintenance costs because material being moved contacts only one moving element. MOYNOS are constructed to stoutly resist corrosion and abrasion. As shown in the cutaway model above, MOYNO's screw-like rotor revolves in a double-threaded stator forming *"progressing cavities"* that move material smoothly along, without foaming, aerating or crushing.

Typical materials pumped include non-pourable pastes, abrasive slurries, chemicals, foods, acids, even suspended solids up to one inch in size. Many materials now successfully pumped by MOYNO were once considered "unpumpable."

Capacities are available up to 500 gpm and pressures up to 1000 psi. Off-the-shelf replacement parts are always immediately available. Write today for Bulletin 30—NE

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motors, household fans, Propellair industrial fans, hoists, Moyno industrial pumps

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capacities to 500 gpm; pressures to 1000 psi

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If you use gears in the products you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of accurate, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities.

FAIRFIELD
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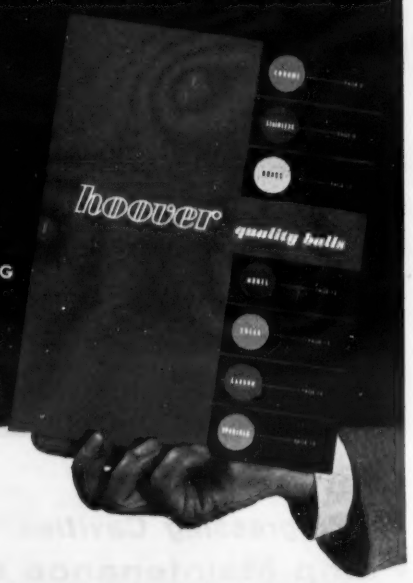
Get Complete Ball Information In Accordance With New AFBMA* Standards

NEW HOOVER CATALOG SIMPLIFIES BALL BUYING AND SPECIFYING



This new catalog details America's widest selection of standard balls in chrome, stainless and carbon steel, brass, bronze, monel, and special materials. Included are tables that show conversions from previous standards to newly revised AFBMA standards.

Under the new AFBMA standards, balls are graded by spherical tolerance expressed in millionths of an inch. For example:

A ball guaranteed to be spherical within 25 millionths of an inch is a grade 25.

A ball guaranteed to be spherical within 10 millionths of an inch is a grade 10.

The information in this catalog will enable you to specify readily and accurately the product required. Be sure to order your copy today.

*Anti-Friction Bearing Manufacturers Association

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Title_____
Company_____
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City_____ Zone____ State____

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LATEX GLOVES for handling delicate parts

Soft woven cotton fabric lining bonded to latex outer cover of Playtex industrial gloves eliminates perspiration discomfort and makes them easy to put on and take off. The gloves protect the hands from harmful contaminants and shield the product from body oils which cause tarnishing and rusting. Form-fitting feature and skidproof surface make it possible to handle delicate parts with ease and safety. The long gauntlet cuff can be used as a forearm protector or turned up to catch drip and splatter. Two styles, 834 Living (13½ in. long) and 835 Utility (11½ in. long) are made in sizes from small to extra large. Made by **International Latex Corp.**, Playtex Park, Dover, Del.

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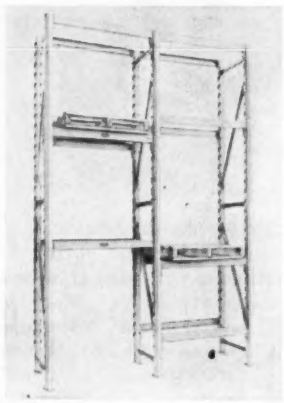
BOLTLESS RACK hand assembled unit is rigid, safe



Each shelf connection of the Triple Wedge boltless rack wedges vertically, front to back and side to side. Rack is hand assembled by engaging support beams in connector holes in uprights and driving into wedged position. Height adjustment is made by driving beam out and relocating it on 4-in. centers. Outsides of uprights are smooth, with no holes or protrusions. Available for any load capacity, height, depth, or span, racks can be used for pallet, skid, die, drum, or hand storage. Made by **Hartman Metal Fabricators, Inc.**, 133 Murray St., Rochester 6, N. Y.

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Controlled Barrel Finishing

Carborundum Co.—A seven-point system for scientifically controlled barrel finishing is detailed in 36-page color booklet entitled "CARBOtrol 7." It sets forth size and type of media, ratio of media to parts, load height, water, compounds, barrel speed, and tumbling time. Line of tumbling media, barrel finishing compounds, and barrel finishing machines and equipment is listed.

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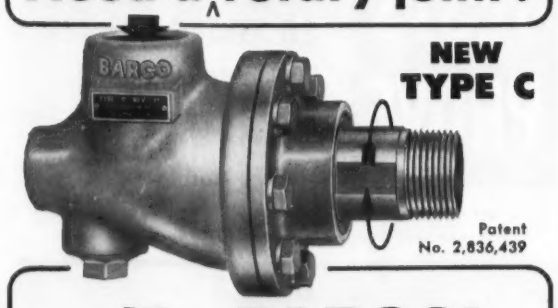
Need a Better rotary joint?



NEW TYPE C

Patent No. 2,836,439

—it's BARCO!

For countless applications, Barco's new Type C Rotary Joint will give you the best operating records you've ever had—*and for LESS COST!*

"CRACK-FREE" CHROME PLATED SLEEVE—A standard Barco feature. Minimizes corrosion, friction, wear. Stainless steel spring also standard.

RESISTS SEAL RING BREAKAGE—The spherical seal ring is under compression, not *tension*, loading. Self-adjusting for wear. Seal withstands shock loads and alternating hot and cold service.

WIDE SPACED BEARINGS—Two, instead of one . . . increased bearing area. No lubrication required. Lowest friction.

200 P. S. I. STEAM RATING—Heavy duty service at *no extra cost.* Eight sizes, ½" to 3". *Send for new Catalog 310 today.* **BARCO MANUFACTURING CO., 530-M Hough Street, Barrington, Illinois.**

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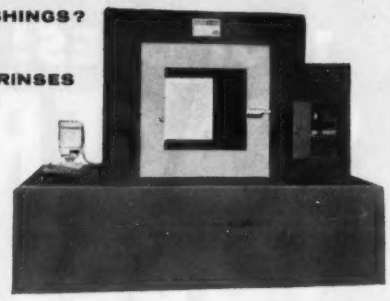
BLOCKS? BUSHINGS? BOLTS?

CLEANS AND RINSES 'EM ALL!



NEW PENNSALT AUTOMATIC SPRAY WASHER

Pennsalt's new Spray Washer effectively removes metal filings, shop soil, oil and grease . . . both from large units and small, basket-loaded parts . . . washes, then automatically rinses in fast, self-timed cycle.

- Synchronous timer can be preset to vary wash-rinse cycle.
- 98-nozzle jet spray network insures fast, thorough washing and rinsing.
- Cleans large parts up to 3′ x 3′.
- Opening and closing door starts and stops processing cycle.
- Can be steam, gas, or electric heated.

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Pennsalt Chemicals ESTABLISHED 1850

For More Information Write:
Metal Processing Dept. 226
PENNSALT CHEMICALS CORPORATION
East: 3 Penn Center, Philadelphia 2, Pa.
West: 2700 S. Eastern Ave., Los Angeles 22, Calif.

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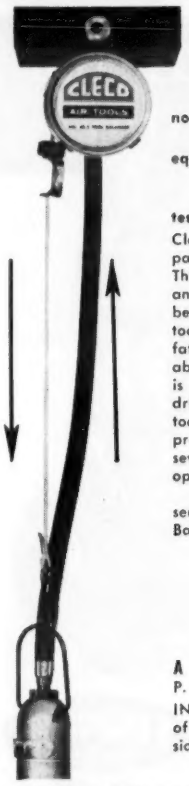

ANNOUNCING THE CLECO SMALL-TOOL BALANCER

no tools required for: Tension Adjustment. Height Adjustment.

equipped with: 100 lb. test, nylon non-conductor cord. Oilite bearings and case-hardened spindle.

tested to: A minimum of 1,000,000 cycles.

Cleco's five-pound capacity balancer is compact (1½" wide). Lightweight (weighs 9 oz.). This economical small tool balancer is quickly and easily adjusted to the weight of the tool being used. It eliminates lost motion, makes tool immediately accessible, reduces operator fatigue and helps increase production. Portable and easy-to-mount, the Cleco® balancer is ideal for use with powerdriven screwdrivers, nut runners, drills, and other hand tools. Its compact size makes it especially practical for use in work stations where several tools are used alternately by an operator.

To order, call your nearest Cleco representative and ask for the No. 40-5 Tool Balancer, or write:

CLECO AIR TOOLS

A Division of REED ROLLER BIT COMPANY
P. O. Box 2119 • Houston 1, Texas, U.S.A.
IN CANADA: Cleco Pneumatic Tool Company of Canada, Ltd., 927 Millwood Road, Leaside (Toronto), Ontario.

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Drill Hardened Steels without Annealing—

USE The New IMPROVED "HARDSTEEL" DRILL

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1380 East 222nd St. • Cleveland 17, Ohio

"HARDSTEEL"

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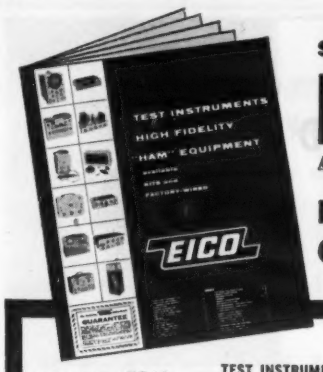

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. . . praised by the experts as BEST BUYS IN ELECTRONICS

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For high-cycle machinery: There's a big, new difference in electric brakes and clutches—Warner's optional spline drive armature. A difference you can measure in reduced maintenance on high-cycle drives because the precision splined hub distributes the load evenly, with no backlash. A difference in your cost, too, because hub and armature both can be assembled easier, faster, for less money. Write for Bulletin P-68.

NEW SPLINE DRIVE ARMATURE

WARNER Warner Electric Brake & Clutch Co. Beloit, Wisconsin

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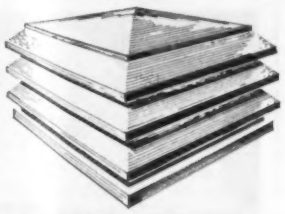
ROOF VENTILATOR in fan sizes from 24 to 60 in.

Design of this low-silhouette roof ventilator blends harmoniously with architectural style of modern commercial and light industrial buildings. It has ample louvered outlet area and flat removable lid for easy access to permanently sealed motor, pulleys, fan, and belts. Exteriors are available in painted and galvanized steel, as well as aluminum, copper, stainless steel, or protected metal. Motor mount is a swivel base for easy adjustment and is spring loaded to compensate for minor belt elongation. Ventilators are offered in seven fan sizes from 24 to 60 in. with ¼ to 10-hp motors. Made by **Bowman Steel Corp.**, Box 2129, Pittsburgh 30, Pa.



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ELECTRIC TRACTOR short unit has 550-lb drawbar pull

Walkie-type Model TG-12 electric tractor, which can also be used as a stand-up rider type, is suited for short-run movement of stock in plants and warehouses. Short turning radius, 27½-in. width, and length of only 46¾ in. assure maneuverability. Unit has two speeds forward and reverse, and pushbutton controls on steering handle. Powered by 12-v battery, tractor has 550-lb drawbar pull with rolling capacity of 10,000 lb. Spring-loaded steering handle applies a 7-in. automotive brake when in vertical or horizontal position. Wheels are rubber-tired. Made by **Barrett-Cravens Co.**, 628 Dundee Rd., Northbrook, Ill.

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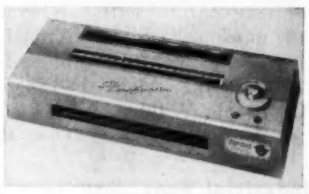
OFFICE COPYING MACHINE equipped with automatic feed



Any printed piece, drawing, photograph, or typed or written copy in all inks and colors can be reproduced on the Perfecta Model 15 photocopy machine. It copies everything visible on the original. Economical machine operates under any light condition and features cartridge fill and automatic current shutoff. Single copies or volume work can be turned out with its automatic feed. Operation is on 110 v ac. Made by **International Photocopy Corp.**, 564 W. Randolph St., Chicago 6, Ill.

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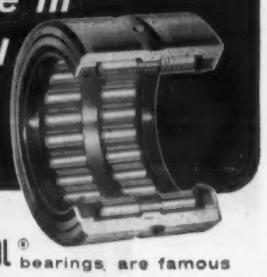
Protected bearing performance in small radial space



McGILL sealed GUIDEROL® bearings are famous for long life under heavy loads

GUIDEROL design combines the inherent high load capacity of a full-complement of race-width rollers with the advantage of center guided rollers that limit skewing and prevent binding under misalignment. Integral seals keep contamination out and lubrication in. This packs a bonus of service life into GUIDEROL bearings and eliminates the need for frequent relubrication.

For limited space, high load, precision bearing requirements, specify McGILL SG series Sealed GUIDEROL bearings.

Write for helpful Bearing Handbook No. H-54-B

engineered electrical products McGILL® precision needle roller bearings

McGILL MFG. CO., Bearing Div., 101 N. LAFAYETTE ST., VALPARAISO, IND.

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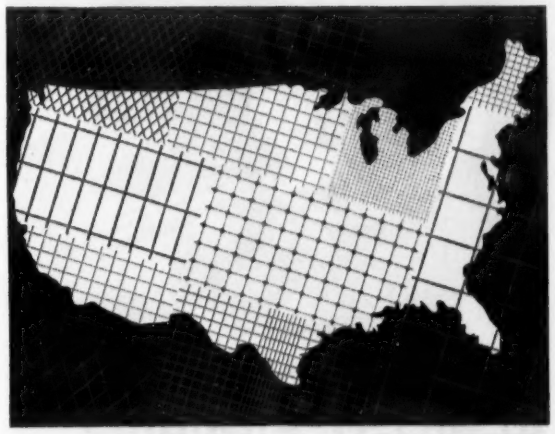
For the finest service available on industrial wire cloth



. . . come to

Cyclone Fence

To meet your needs for industrial wire cloth . . . assure you prompt, efficient service Cyclone Fence maintains 85 sales offices and 30 warehouses—strategically located all across the United States. Wherever your plant is located, there is a Cyclone office near. A phone call to this office will put a trained, experienced Cyclone representative at your service.

Before you place another order for industrial wire cloth, get in touch with Cyclone. No other company in the industry can match Cyclone's service program.

USS **Cyclone Industrial Wire Cloth:** Meshes vary from ¾ inch to 24 wires per inch. Warp and shoot wires can be varied to provide rectangular spacing or panel and rib weaves. Wire gauges range from 14 gauge to 36 gauge. Wire cloth can be slit and cut to length according to your exact requirements.

• Plain Steel • Painted Steel • Hot Galvanized After Weaving • Electro Galvanized After Weaving • Amgal (Galvanized Before Weaving) • Stainless Steel • Aluminum • Commercial Bronze • Plastic Coated Steel

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Cyclone Fence Dept. American Steel & Wire Division of USS United States Steel

Manufactured at De Kalb, Illinois · Sales Offices Coast to Coast

Cyclone Fence Dept., American Steel & Wire
SS-119, 614 Superior Avenue, N. W.
Cleveland 13, Ohio

Please send me a free copy of your new catalog on USS Cyclone Industrial Wire Cloth.

Name .....
Address .....
City ..... Zone ..... State .....

▲ For more details circle NED-604 L9 on enclosed inquiry slip ▲

YOURS FOR THE ASKING!

Free samples and complete technical data on the new **W-POINT SOCKET SET SCREW** *by* **PARKER-KALON®**

Test for yourself, the revolutionary new socket set screw that gives you the highest degree of holding power ever attained . . . *at no increase in price!* See for yourself how the new, cleaner, far more uniform tracking of the cup edge and more extensive contact area provides . . .

30% MORE BACK-OUT TORQUE
50% MORE RESISTANCE TO VIBRATION
50% MORE RESISTANCE TO ROTARY SLIPPAGE

Write today for test samples and Technical Bulletin No. 1106

PARKER-KALON, a division of General American Transportation Corporation, Clifton, N. J. • Offices & Warehouses in Chicago and Los Angeles. Look to Parker-Kalon for a complete line of Socket Screws . . . to fulfill every requirement. Available through Industrial Distributors coast to coast.

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NEW!

Keeps Pipe Joints Lubricated on Temperatures Up to 1050° F.

This new, proven thread compound has no equal for high-temperature/high-pressure installations. Provides better lubrication when assembling screwed or flanged joints . . . prevents seizure and galling when taking down. Crane Formula 425-A doesn't deteriorate in can. Conforms to Military Specification MIL-A-907. Stocked in 1- and 4-pound cans by your local Crane Branch or Crane Wholesaler.

FREE SAMPLE . . . Just ask your Crane Representative

CRANE® Crane Co., Gen'l Off.: 836 S. Michigan Ave., Chicago 5, Ill.

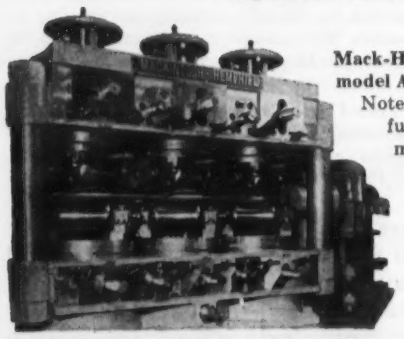
For more details circle NED-608 L9 on enclosed inquiry slip

Is your tubing ALMOST straight?

Why settle for almost straight, almost round pipe and tube when a Mack-Hemp Straightener gives you premium straightness and roundness every time in a single pass.

Mack-Hemp's open three-post rotary tube straightener is the most effective machine ever developed for finishing pipe and tube. It's rugged, yet easy to adjust . . . to maintain. It's easy to set the rolls, and easy to reset them for different tube diameters.

More important: It's versatile . . . fits into any tube or pipe mill production line. It's fast . . . all six rolls are driven for speeds up to 1,000 fpm and more. It's guideless . . . won't mar tubing surfaces. And there are thirteen models . . . for tube diameters ranging all the way from 1/16 inch to 16 inches.



Mack-Hemp three-post model AX straightener. Note how this clean functional design makes it easy to see and get at the rolls for adjustment and locking.

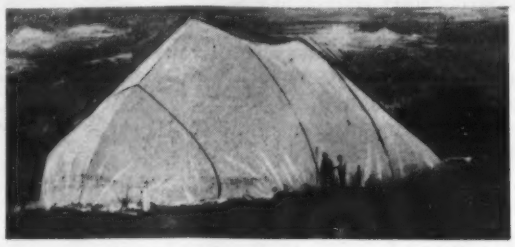
Learn more about the Mack-Hemp Straightener. Write for a free copy of our 24-page illustrated technical bulletin, "How to Straighten Pipe and Tube."

MACKINTOSH-HEMPHILL
Division of
E. W. BLISS COMPANY
901 Bingham Street • Pittsburgh 3, Pa.

For more details circle NED-609 L9 on enclosed inquiry slip

PLASTIC FILM BUILDING for temporary storing, warehousing

Fabricated of 80 x 100-ft sheets of polyethylene film, the illustrated building measures about 25 ft high, 40 ft wide, and 75 ft long. It has no posts or other sup-

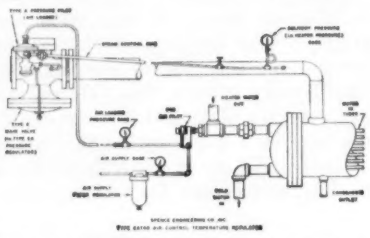


porting devices, offering 3000 sq ft of unobstructed area suited for storage, warehousing, or manufacturing operations. The building is anchored to the ground at the periphery and is supported in its desired shape by two air blowers. Buildings can be made in various sizes with this construction. Made by **Canton Containers, Inc.**, Dept. N.R., 1101 Ninth St. S.E., Canton, Ohio.

For more details circle NED-610 L9 on enclosed inquiry slip

TEMPERATURE CONTROL regulates wide, sudden load swings of water flow to within ±5° F

Cascading of an air signal to a pressure regulator enables this temperature control to provide accurate regulation in systems subjected to wide and sudden load swings. Instantaneous load swings from 210 gpm down to 80 gpm water flow are easily handled while controlling temperature to within ±5° F of the set point. Quick response is based on a bimetal temperature sensing element.



Remote control of the set point and remote temperature indication are available. Almost any range of temperature setting is available. Heater pressures up to 90 psi can be attained with 15 psi air loading pressures. Valves are offered for the system in 1/4 to 12-in. sizes. Made by **Spence Engineering Co.**, 45 Grant St., Walden, N. Y.

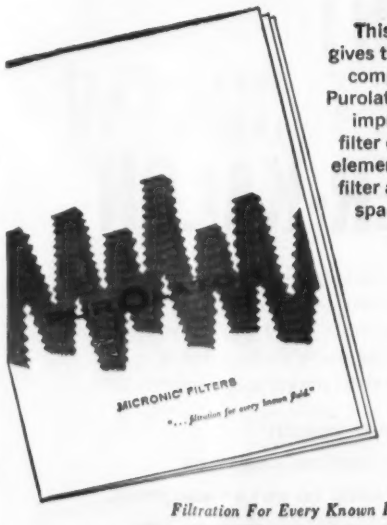
For more details circle NED-611 L9 on enclosed inquiry slip

Industrial Fans

Fuller Co., Lehigh Fan & Blower Div.—28-page Bulletin L-5 presents fundamental data relating to capacities and construction of Lehigh Type I.E. industrial fans. Rating tables cover fans with wheel diameters from 17 to 72 in. and capacities from 694 to over 68,000 cfm. Four pages are devoted to dimensional data of fans in 70 to 250° F and 251 to 600° F constructions.

For more details circle NED-612 L9 on enclosed inquiry slip

New design information on Purolator Micronic® filters



This new, free bulletin gives the design engineer complete basic data on Purolator's phenolic resin impregnated, cellulose filter elements. Micronic elements pack maximum filter area into minimum space (up to ten times more than other types); do not channel; are waterproof and warp-proof; have rigidly controlled porosity.

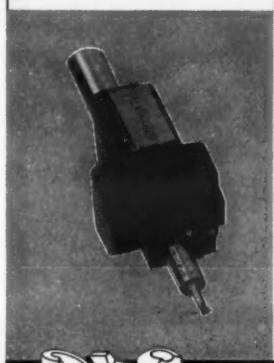
For your copy, write to Dept. MCI-97.

Filtration For Every Known Fluid

PUROLATOR PRODUCTS, INC.
RAHWAY, NEW JERSEY AND TORONTO, CANADA

For more details circle NED-613 L9 on enclosed inquiry slip

NEW BOKUMETHOD CUTS ACCURATE INTERNAL GROOVES



Bokum's new RT series—6 sizes in all—of recess tool holders has been especially designed for hand screw machines, turret lathes and multiple spindle automatic screw machines. The exclusive straight line dovetail motion gives accurate grooving dimensions.

Use this Bokumethod . . . a Bokumatic RT holder with standard Bokum cutting tools . . . for "O" ring and retaining ring grooves, back chamfering, thread recessing and special internal forming.

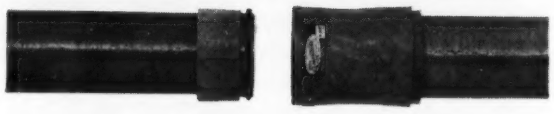
Write Dept. T for complete information.

TRADE MARK REG. U.S. PAT. OFF.

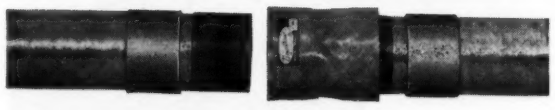
BOKUM TOOL CO. INC.
14775 Wildemere Ave., Detroit 38, Michigan

For more details circle NED-614 L9 on enclosed inquiry slip

BONDSTRAND®



fiber-glass reinforced epoxy pipe by Amercoat®



. . . strong as steel pipe, only one-eighth the weight. Tensile: hoop 80,000 psi, longitudinal 40,000. Highly corrosion resistant. Won't scale, cold flow or deform. 20-foot lengths easy to cut and join; threaded or locking wedge fittings.

MOST COMMON DIAMETERS AVAILABLE

Write for BONDSTRAND technical brochure

Amercoat CORPORATION
Dept. QK • 4809 Firestone Boulevard
South Gate, California

114A

For more details circle NED-615 L9 on enclosed inquiry slip

Are your Wire Cloth Filtering and Screening Applications giving TOP EFFICIENCY?

How long since you checked your wire cloth filtering or screening? Perhaps new alloys, mesh sizes and weaves can show you new efficiencies and economies. Check your specifications and requirements with Cleveland today. They have available hundreds of the finest quality wire cloth samples from which to select a wire cloth for your needs. You can rely on Cleveland's recommendations — supported by 40 years of manufacturing experience in the weaving of wire cloth and fabrication into products. Send specifications today. Ask for Bulletin No. 7.

See our ad in MacRae's Blue Book and The Purchasing Directory

THE CLEVELAND WIRE CLOTH & MFG. CO.
3573 EAST 78th STREET, CLEVELAND 5, OHIO • DI 1-1832

For more details circle NED-616 L9 on enclosed inquiry slip

H&K perforated materials

a perfect medium of

DESIGN

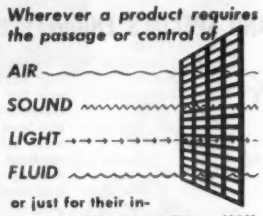
with functional and decorative uses

Harrington & King can perforate the proper design, pattern and open area in practically any metallic or non-metallic material available in coils, sheets or plates—from foil-thin to 1" thick. Specify H & K perforated materials on your next job—see what a difference over 75 years of experience can make!

FIND NEAREST H&K AGENT IN THE 'Yellow Pages'

Listed Under "Perforated Metals"

Wherever a product requires the passage or control of



or just for their inherent aesthetic qualities, H&K perforated metals can serve you

Write for General Catalog No. 75, Today!

THE **Harrington & King** PERFORATING CO. INC.

Chicago Office and Warehouse • *New York Office and Warehouse*
5658 Fillmore St., Chicago 44 114 Liberty St., Dept. NED. New York 6

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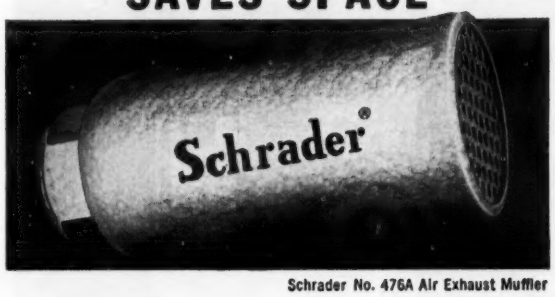
NEW! MINIATURIZED SCHRADER AIR EXHAUST MUFFLER SAVES SPACE



Schrader No. 476A Air Exhaust Muffler

Compact . . . sturdy . . . especially designed for use in cramped areas.

Reduces noise to a whisper. Eliminates need to pipe harsh, disturbing air exhaust to outside of building.

Improves plant working conditions . . . ups production . . . by reducing noise-induced fatigue.

Size: Over-all length, 3¼". Diameter, 1 7/16". Has ⅜" N.P.T. (Specify #476A Schrader Air Exhaust Muffler —your Schrader Distributor has it now!)

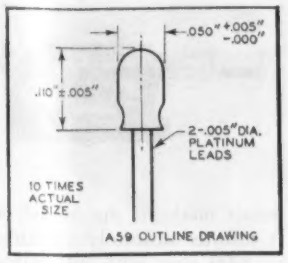
Schrader® a division of SCOVILL

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Inc.
459 Vanderbilt Avenue, Brooklyn 38, N. Y.

QUALITY AIR CONTROL PRODUCTS

▲ For more details circle NED-618 L9 on enclosed inquiry slip ▲

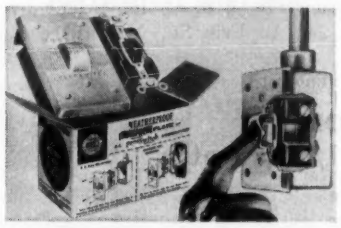
SMALL INDICATOR LAMP operates from transistor output



Operating at less than 1.5 v and drawing about 50 ma, this indicator lamp is made for use in transistor circuits. It is housed in a 0.110-in. long, 0.050-in. diameter vial and has two platinum leads extending from one end. The incandescent lamp will operate directly from the output of a transistor without amplification. Made by **Minitron Components Corp.**, 67 Illinois Ave., Paterson, N. J.

▲ For more details circle NED-620 L9 on enclosed inquiry slip ▲

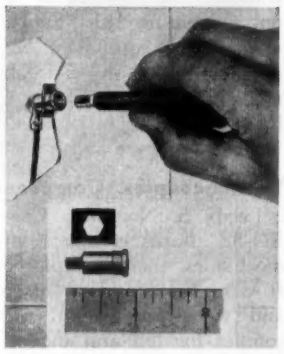
WEATHERPROOF PLATE protects switches in outdoor use



Weatherproof Insulprene plate protects outdoor Pressswitch electric switches from moisture, dust, dirt, or other adverse conditions. Although completely sealed in, the switch is operated at any time by pressing the raised surface of the plate where indicated. Plate and switch are packaged as a unit, available in 15 or 20-amp, 120-277-v ratings in single-pole, double-pole, three-way, and four-way types. Plate fits both FS and standard boxes, and is made of Du Pont neoprene base compound that resists oil, hot water, live steam, and temperature extremes. Made by **Harvey Hubbell, Inc.**, State & Bostwick Streets, Bridgeport 2, Conn.

▲ For more details circle NED-621 L9 on enclosed inquiry slip ▲

PANEL RECEPTACLE for fast connection of electric wire



Panel mounted in seconds without special tools, Model WA-014 panel receptacle affords fast, positive means for connecting and disconnecting wires. The 7/8 in. long unit is knurled to prevent rotation when pressed into a panel or insulating strip and is further locked into position with a Speed Nut pushed on from the rear. Threaded stud connects it to power source terminal lug. Receptacle has an insulated mating plug with positive locking connection. Made by **Empire Products, Inc.**, Cam-Lok Div., Box 98, Cincinnati 36, Ohio.

▲ For more details circle NED-622 L9 on enclosed inquiry slip ▲

Plastics EXTRUSIONS by CONNEAUT

The Conneaut Rubber And Plastics Company is equipped to handle your requirements for almost any cross section in extruded Polyethylene and Vinyls, as well as Vinyl or Polyethylene sheeting in gauges from .035" to .250". Where needed, we formulate special compounds in our own laboratories to meet your special applications. Complete die-making facilities in our own plant enable us to obtain extremely close tolerances . . . meet specifications exactly. Send us your blue prints for our quotations . . . or your problem for analysis and recommendations.

SEND FOR FREE, ILLUSTRATED FOLDER

Contains complete details on Conneaut's custom service on plastics compounding and extruding. 1020-1

THE CONNEAUT RUBBER AND PLASTICS COMPANY
CONNEAUT, OHIO

▲ For more details circle NED-623 L9 on enclosed inquiry slip ▲

New **MONARCH** *developments*

STOP PREMATURE RIM SEPARATION!

MONARCH SOLIDS FEATURE NEW COMPOUND AND BONDING PROCESS . . . REDUCE REPLACEMENT COSTS

Embedded metal scrap, chemicals and excessive heat cause premature solid tire failure by destroying the bond between the tire and rim. MONARCH engineers solved this problem by combining an advanced rubber-to-metal chemical bonding process with a new, extra tough, natural rubber stock . . . Compound T-5100. Field tests prove that *MONARCH solids now feature superior resistance to rim separation* caused by the above factors. And cost-conscious buyers are specifying MONARCH solids to cut replacement costs!

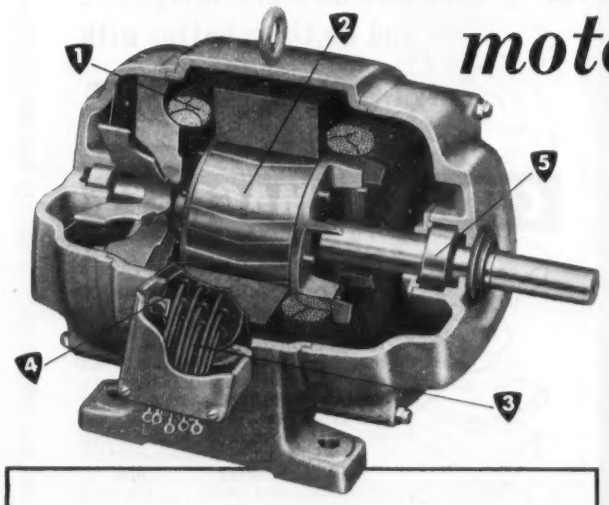
FOR ADDITIONAL DETAILS . . .
write direct or see your Monarch tire dealer.

THE MONARCH RUBBER COMPANY
260 LINCOLN PARK
HARTVILLE, OHIO

7-225 General Motors Bldg. Detroit, Mich. • 2353 No. California Ave. Chicago, Ill. • Western Warehouse: Reno, Nevada

▲ For more details circle NED-624 L9 on enclosed inquiry slip ▲

a new concept in motor protection!



STERLICONE MULTI-SHIELDED Motors are shielded 5 important ways: (1) Exclusive *STERLICONE* Shielding (2) Anti-corrosion treatment of rotor and fan (3) Neoprene insulated leads (4) Sealed terminal box (5) Sealed bearings.

STERLICONE MULTI-SHIELDED DRIP-PROOF MOTORS

STERLICONE MULTI-SHIELDED

Provide totally enclosed protection *at less cost* for many applications previously requiring TEFC designs.

STERLICONE MULTI-SHIELDED Motors provide effective protection against excessive moisture, salt spray, oils, corrosive agents, many chemicals and dust. For complete information, write for a copy of Bulletin 196.

STERLING ELECTRIC MOTORS, INC.
5401 Telegraph Rd. • Los Angeles 22, California

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"Sounds for Safety"

save life & property with Falcon®

No one can place a price on the possible loss of lives due to fire.

But Falcon Automatic Fire Detectors & Systems can give early warning of fire to protect lives and guard property.

Falcon Automatic Fire Detectors & Systems are:
- U/L APPROVED
- SELF-CONTAINED (no wires or batteries)
- FULLY GUARANTEED

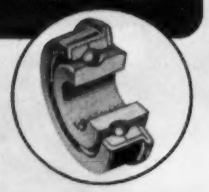
... and they are low in cost!

WRITE for particulars — and free, informative "Sounds for Safety" folder! DEPT ND

Falcon® ALARM CO., INC.
SUMMIT, NEW JERSEY

For more details circle NED-625 L9 on enclosed inquiry slip

Cut your BEARING COSTS to just PENNIES



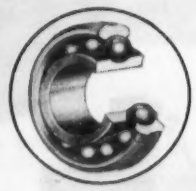
WITH THESE 5 FREEWAY UNITS

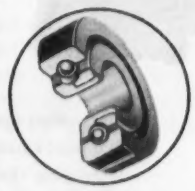
You get positive anti-friction protection for less than you ever thought possible, when you use Freeway semi-precision bearings. Because every Freeway bearing combines field-proven design with quality construction, to give you peak performance over a wide range of operating conditions.

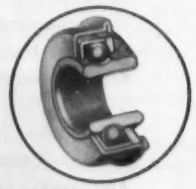
Another important factor—Freeway offers you a selection of five separate and distinct types of bearings. Each type incorporates definite application and installation advantages, to provide a "tailor made" unit that will meet your exact requirements easily, efficiently and economically.

Our catalog 59, covering thousands of bearing combinations, will interest you. Write today.

Freeway washers and stampings also reflect the highest manufacturing standards . . . at the lowest possible price. Full information about these items also available upon request.







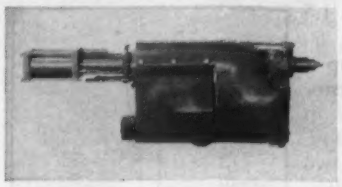
Send for CATALOG 59

Complete data on all five bearing types. Get your copy now.

Freeway WASHER & STAMPING COMPANY
P. O. Box 1756, Cleveland 5, Ohio

For more details circle NED-626 L9 on enclosed inquiry slip

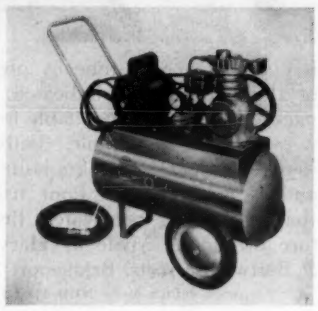
AUTOMATIC DRILLING UNIT capacity is 1/8 to 1/2 in.



Base casting which allows a shorter mounting dimension, a key slot in the center line for easy set-up, and use of NEMA standard motors are improvements made in the Model 603 automatic drilling unit. It affords infinitely variable spindle speeds from 600 to 4000 rpm with adjustable rapid approach to work. Hydraulic resistance unit with a meter valve governs feed rate. Also incorporated are a mechanical depth stop and rapid withdrawal from the work. The induction type motor is rated 1/2 hp, 1725 rpm, 115/230 v or 220/440 v. On deep hole drilling, an impulse timer brings drill out every second to remove chips. Quill pressure is seven times air line pressure, quill travel is 4 in., and drill capacity is 1/8 to 1/2 in. Made by **Electro-Mechano Co.**, 241 E. Erie St., Milwaukee 2, Wis.

For more details circle NED-627 L9 on enclosed inquiry slip

AIR COMPRESSOR with 1/2 or 1/3-hp motor



Heavy - duty Pressure Princess single-cylinder air compressor on a welded steel pressure tested 7½-gal tank comprises the Tankmobile Jr. mobile air-power outfit for lubrication, spray painting, fumigating, and similar uses. Unit is mounted on semipneumatic 8-in. rubber-tired wheels and is offered with a 1/2-hp capacitor motor, or a 1/3-hp split phase motor. Former has a pressure switch to control tank pressure at 60/80 psi by running motor only when needed. Spray guns, material containers, and control equipment are available accessories, and an air chuck and 15 ft of 1/4-in. air hose are standard equipment. Made by **Campbell-Hausfeld Co.**, 193 Railroad Ave., Harrison, Ohio.

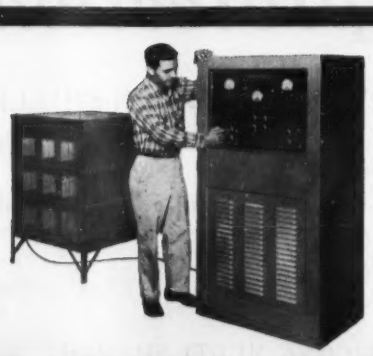
For more details circle NED-628 L9 on enclosed inquiry slip

Thermocouples, Components, Accessories

Leeds & Northrup Co.—Revised 52-page Catalog EN-S2 affords complete information on line of thermocouples, thermocouple components, and accessories. It describes standard assemblies in protecting tubes and wells for general applications, special thermocouples for lab and industrial uses, and an extensive line of bare and insulated thermocouple wires, replacement elements, ceramic insulators, metal and ceramic protecting tubes, wells, terminal heads, and extension lead wires.

For more details circle NED-629 L9 on enclosed inquiry slip

CLEANING PROBLEM?
SONOCEN® Ultrasonic Cleaners by BRANSON may be your answer!



Experienced counsel in planning, installation, and maintenance of ultrasonic cleaning systems. Wide range of standard, use-proven units combine into efficient cleaning systems with any needed features and capacity from benchtop size to the largest engineered batch or conveyorized installation. Assured nationwide service by factory-trained specialists. Tell us your problem.

BRANSON ULTRASONIC CORPORATION
56 Brown House Road • Stamford • Connecticut

For more details circle NED-630 L9 on enclosed inquiry slip

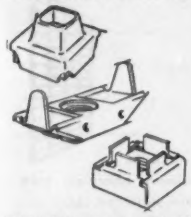
FASTENERS!

INCLUDING WIDE-APPLICATION TYPES LIKE THESE:

Plastisol Sealer Nuts — Seal against dirt, liquids etc. Minimize damage and noise from vibration. Hex nut is 3/8" with 10-24 NC2 thread. Cupped spring steel washer 5/8" OD. Height of sealant 0.125".

Clinch-On Nuts — High torque resistance without lockwashers, welding etc. when inserted in D-shaped hole. OD is 9/16", slabbed on one side to 0.426-435". Thread depth 0.173". NC2 thread sizes: 1/4"-20, 1/4"-28, 8-32, 10-24, 10-32, 12-24.

AND SPECIALS ENGINEERED TO YOUR SPECIFIC NEEDS:



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NEW BULLETIN on Machinery Mountings

Tells how to save time and money when installing all types of machinery. Describes savings of 30% and more in cost, 80% in time. Shows a "Do-It-Yourself" Leveling Mount, describes Unisorb cement and Unisorb Vibration absorption; and gives more valuable tips.

Unisorb pads come in a wide range of densities — a type for every kind of machine. Look for the red center and brand mark.

Send for this New Unisorb Bulletin and details on Money-Back Trial Offer today!

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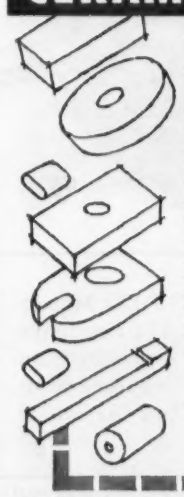
STACKPOLE CeraMAGNET®

CERAMIC MAGNETS



The permanent magnets that are really permanent

Ceramics offer greatest resistance to demagnetization of any commercial magnet material . . . All energy is fully usable—no keepers, pole pieces or auxiliary air gaps needed . . . Can be magnetized before or after assembly . . . Electrically non-conductive . . . Less heating . . . Inert to chemicals and gases . . . Up to 8 or more poles on a single flat face . . . AND MANY OTHER ADVANTAGES.

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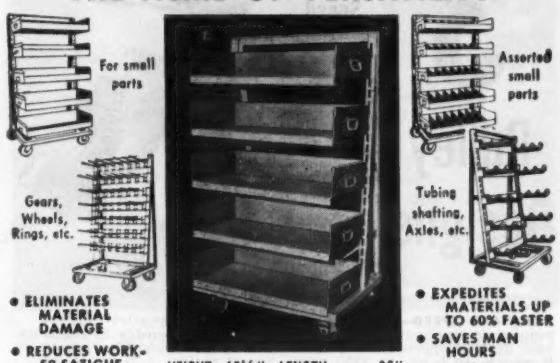
THE ACME OF VERSATILITY



- ELIMINATES MATERIAL DAMAGE
- REDUCES WORKER FATIGUE
- MAXIMUM EFFICIENCY AT MINIMUM COST

HEIGHT—65½" LENGTH — 35"
WIDTH — 24" CAPACITY 2000 lbs.

- EXPEDITES MATERIALS UP TO 60% FASTER
- SAVES MAN HOURS
- SAVES FLOOR SPACE
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Equipped with 6" roller bearing steel wheel casters

VER-T-RACK can be handled with lift truck.
Trays are adjustable on **VER-T-RACK**

PRICE — $49.50 Varied Accessories Extra

Slightly higher west of the Rockies Write today for descriptive literature

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Pressure-Vacuum Controls for Industrial, Aircraft, Marine, Special Purpose

APPLICATIONS: Unlimited. For 28 years, we have been designing and manufacturing controls to fit individual needs.

MEDIUM: Air, gas or liquid.

RANGE: 30"hg vac to 1700 PSI.

SENSITIVITY: 3/4 ± 1/10" W.C. and up.

SWITCHES: Normally closed, open or double throw. Manual reset, high ambient and others available. 15 or 20 amps. 115/250 Volts AC. Also DC.

TYPES: Skeleton or enclosed, calibrated or uncalibrated, single or multi-switch, minimum size and weight, differential pressure, absolute pressure, super-sensitive, shock-proof, explosion-proof and others.

OPERATION: Precision-made bellows combine with full rated snap-action switches for quick accurate response to pressure or vacuum change.

For further information request Condensed Catalog #500.

UNITED ELECTRIC
CONTROLS COMPANY
88 School St., Watertown, Mass.

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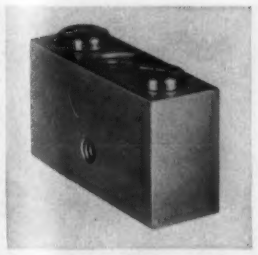
BALL CHECK VALVE
rated for 100 psi and 300° F



If both supply pressures fail, the two inlets of this double ball check valve are immediately sealed to prevent bleed-off of downstream pressure. The miniature valve has a separate ball for each inlet. The high pressure of one inlet shuts off the low pressure of the alternate inlet and holds it closed until the pressure of the second inlet becomes the higher of the two. Valve body is rated for 100 psi and 300° F maximum. Made by George W. Dahl Co., 86 Tupelo St., Bristol, R. I.

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FIBER FILTER CARTRIDGE
for water, oil, and solvent uses

Precise filtration through the 5 to 75-micron range in aqueous, oil, and solvent applications is assured by the Feutron filter cartridge. It consists of an aluminum core and viscose fiber filter media of varying denier. Latter achieves the exact gradients of filtering action. Thus, a 50-micron cartridge will hold back particles 50 microns and over and will let pass all particles up to 49 microns. It is made in a single size to fit either 9¾ x 2½ or 10 x 2¾-in. filters. Other sizes can be made. Media for corrosive filtration problems is obtainable. Made by American Felt Co., Glenville, Conn.

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ADJUSTABLE DOCKBOARD
spots trucks without attendant

Trucks and semi-trailers are safely spotted against docks equipped with Ajust-A-Lip Dockboards without the aid of a dock attendant. Lip automatically retracts behind dock bumpers when trucks pull out. Ramp maintains its flush position with floor cross-traffic position until ready to be adjusted to truck. Ramp floats like a raft, compensating for out-of-level truck beds. Shallow pit construction and tight seal which minimizes accumulation of dirt and debris are features. Dockboard is shipped completely assembled. Drawing A shows lip protected behind cock bumpers, and drawing B shows lip extended. Made by Kelley Co., 2129 W. Mill Rd., Milwaukee 9, Wis.

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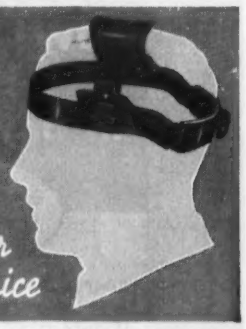
NEW CESCO Hed-Rite Headgear

— a Premium Quality Headgear at No Increase in Price



- **BROAD BEARING, PIVOTING CROSS STRAP,** with concealed height adjustment
- **NON-SLIP, NON-STRIPPING RATCHET** adjustment for head size
- **NYLANITE CONSTRUCTION,** non-shrinking, non-warping
- **20% to 25% LIGHTER** than previous headgears
- **CAMBERED HEADBAND** with offset rear strap
- **EBONY FINISH** resists degeneration by Ultra-Violet rays
- **NO RIVETS, NO EXPOSED METAL**—cannot snag hair
- **INTERCHANGEABLE WITH HARD HATS.** Snaps on or off in seconds

The **Hed-Rite** headgear may be worn with any face shield, helmet, hood or goggle equipped with CESCO X-12 brackets. Headgear is instantly detachable from helmet or shield without the use of tools. There is no electrical conductor between the interior of the headgear and the exterior of the shield or helmet.

See your CESCO distributor or write for FREE descriptive folder

CESCO FOR SAFETY

CHICAGO EYE SHIELD COMPANY
2715 W. Roscoe St., Chicago 18, Illinois

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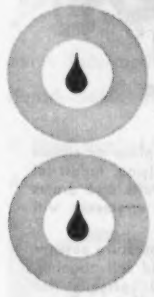
positive filtration

(to ½ Micron) for as little as

.00015¢ per gallon!

And it's completely automatic!



Now, from Olson, the first completely automatic, pressure-type filter! Every cycle—precoat, run, backwash—is automatically controlled. Injection of filter-aid (when used) and sludge carry-out are also automatic.

Maintenance is virtually eliminated in this trouble-free system. No parts to change, no elements to replace, and most important, no costly downtime for cleaning!

In large central systems, or with individual machines, Olson Filters guarantee over 96% purification of all types of coolants at the lowest cost per gallon.

Write for free catalog on the new Olson automatic pressure-type filter which describes the 8 standard models from 10 gpm to 600 gpm capacities.

OLSON FILTRATION ENGINEERS
Division of The American Laundry Machinery Company
CINCINNATI 12, OHIO

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Highest in efficiency and power factor,

smallest in size

SYNCRO-*SPEDE*

The Louis Allis synchronous induction motor

The new Louis Allis "Syncro-Spede" synchronous induction motor delivers constant speed throughout its *entire* load range. Ideally suited for multiple-motor systems where several motors must operate in exact synchronism.

New design is really compact—"Syncro-Spede" actually comes in same frame size as induction motor of comparable hp! High efficiency and power factor provide operating economy. Available in sizes up to 100 hp. For facts, write The Louis Allis Co., 436 East Stewart Street, Milwaukee 1, Wisconsin.

LOUIS ALLIS

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MEASURE CO DIRECTLY

WITH THE **monoxor®**
CARBON MONOXIDE INDICATOR

THIS REMARKABLY SIMPLIFIED INSTRUMENT INDICATES CARBON MONOXIDE PERCENT IN THE AIR SAMPLE TESTED BY MEASUREMENT OF CO-STAIN IN THE INDICATING TUBE.

- ✓ Requires no color matching — is independent of operator's color perceptiveness.
- ✓ Accurate and dependable over wide range of lighting conditions.
- ✓ Not affected by presence of other gases normally encountered in safety testing (nitrous oxide, sulphur dioxide, methane, etc.)

Range:
10 to 2000 PARTS CO per MILLION PARTS of AIR
(0.001% to 0.2% CARBON MONOXIDE)

M-31 *For complete particulars, send for Leaflet 890A*

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Send me a copy of MONOXOR CO Indicator LEAFLET 890A

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The ROTARY UNION*

America's All-Purpose Rotating Joint

Over 40 Standard types and sizes of plain or siphon Rotary Unions are available for supplying industrial fluids and gases to revolving machine rolls and drums for heating or cooling purposes. PSC engineers will work out special applications.

The Rotary Union has a high speed, high pressure positive mechanical seal which is self-adjusting and self-aligning. This, plus ball-bearing construction, and optically flat mechanical sealing surfaces makes the Rotary Union the finest, longest lasting, and most economical rotating joint in the world. Write for Bulletin 700D.

Pipe sizes ¼" through 5" • Trade Name—Patented

"WHERE Good Connections COUNT"®

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Tighter Patterns Faster Cleaning with BORIUM Blast Cleaning Nozzles!

GUARANTEED 300 HOURS WITH SILICA SAND... High efficiency with all abrasives.

Here's industry's answer to *lower* blast cleaning costs and *faster* production. BORIUM Nozzles lick the high cost of frequent nozzle replacements, declining efficiency, poor cleaning and waste of compressed air. Secret is in BORIUM Nozzle's tungsten carbide liner. Its tremendous hardness and wear resistance maintain original orifice size and velocity, almost eliminate cut-outs . . . keep the pattern *tightly concentrated* on target! *Sizes and designs for every requirement, standard or special.*

Ask for BORIUM Nozzle literature!

STOODY COMPANY
11992 E. Slauson Ave.
Whittier, California

For more details circle NED-644 L9 on enclosed inquiry slip

For full information and performance chart write to:
Hood Industrial Gloves • Watertown 72, Massachusetts

Hood industrial gloves

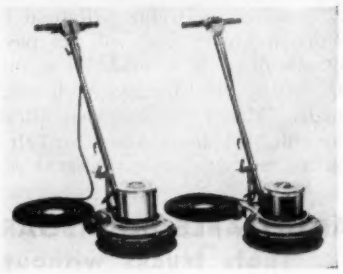
For more details circle NED-645 L9 on enclosed inquiry slip

AUTOMATIC DRILL POINTER grinds 0.032 to 1.5-in. diameters

Drill points are ground concentric within 0.0002 in. on the Model 100 Winslo-Matic drill pointer. The automatic machine accommodates drill diameters from 0.032 to 1.5 in., producing Winslow Type 4, other helical (self-centering), and conventional points. Four power-operated work heads are quickly changed according to drill diameter. Operation is in a continuous cycle. The drill point is formed on a 20-in. diameter grinding wheel by combining two cam movements, after which the drill is automatically ejected. Most countersinks can also be sharpened. Machine has an automatic, self-compensating wheel dresser, a pressure coolant system and requires no adjustment for drill length variations. Made by **Winslow Product Engineering Corp.**, 47 St. Joseph St., Arcadia, Calif.

For more details circle NED-646 L9 on enclosed inquiry slip

FLOOR MACHINES 13-in. brush size for various uses



Latest addition to Challenger line of floor maintenance machines is 13-in. brush size which features quick-change attachments for polishing, waxing, scrubbing, and buffing. Unit has a quiet running, heavy-duty capacitor motor which will not create radio interference and features a self-leveling brush bracket to prevent "hopping." Operator can adjust height of handle by touching handle locking clamp with his toe. De luxe model has polished chrome motor and chassis, retractable wheels, and dual trigger safety switch. Commercial model with painted motor and polished chassis has a single trigger switch and fixed wheels. Made by **Holt Mfg. Co.**, 669 20th St., Oakland 12, Calif.

For more details circle NED-647 L9 on enclosed inquiry slip

Semiconductor Directory

Allied Radio Corp.—Fifth edition of the Allied Semicondutor Directory is a comprehensive directory and price guide to transistors, diodes, and rectifiers produced by 16 leading domestic manufacturers. Over 2100 types are listed, including latest high speed switching, high current power, zener, and diffused junction mesa types.

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SIMPLE AS A-B-C!
When an endless belt breaks, merely cut off the required length of belt from a roll of Open End V-Belting, apply an Alligator V-Fastener and the machine is ready to "roll" again.

DESIGN NEW DRIVES WITH THIS IN MIND
V-belts can now be made to any length . . . center distances are no problem . . . eliminate need for special length belts.

ONE STRONG JOINT
Permits fast and easy installation on all types of drives, particularly fixed center drives and drives with outboard bearings.

SOLD IN COMPLETE PACKAGE KITS 5 SIZES! Order from your distributor.

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"FOR THE SPLICE OF A LIFETIME"

Flexible STEEL LACING COMPANY

4664 LEXINGTON ST. • CHICAGO 44, ILLINOIS

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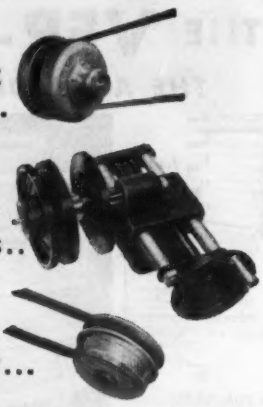
3 Pulley Designs



For Constant Speed...

For Hi-Ratios..

For Economy...

CONSTANT SPEED—Hi-Lo "Loadomatic" (Automatic) Pulleys employ an exclusive cam and cam follower assembly to maintain desired speed ratio over a wide range of load variation. Sizes: ¾ to 5 hp. at 1750 rpm. Speed ratios: 1.75 up to 2.6 to 1. *Request Bulletin A458.*

HIGH RATIO—Hi-Lo Hi-Ratio Pulleys provide an extremely wide range of speeds for constant speed motors up to 1 hp. Sizes and speed ratios: fractional to ½-hp. model up to 6 to 1, fractional to 1-hp. model up to 7½ to 1. *Request Bulletin B455-2.*

ECONOMY—Hi-Lo FHP Pulleys are low cost, high quality, compact units. They feature exclusive Hi-Lo cam design for positive speed control. Three sizes: ½, ¾ and 1 hp. Speed ratios: 2 to 1 for ½ and ¾-hp. models, 2½ to 1 for 1-hp. model. *Request Bulletin C458.*

Give application details for specific information. Ask for prices.

Manufactured By HI-LO MANUFACTURING COMPANY

Nationally Distributed By LOVEJOY FLEXIBLE COUPLING COMPANY
4953H West Lake St., Chicago 44, Ill.

For more details circle NED-650 L9 on enclosed inquiry slip

No Other PROTECTOR but KLIXON Type T* Gives Your Product GREATER RELIABILITY

*Ask your motor manufacturer about it.

GREATER . . . • Assurance Against Motor Failure • Reduction in Repairs and Service • Customer Satisfaction and Goodwill

Most conventional protectors used today provide only limited motor protection . . . against two, three or four overheat conditions. But KLIXON Type T Protectors safeguard motors from all six causes of motor burnout.

1. Running overload with or without high ambient or ventilation blocked.
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4. Locked rotor with main winding only in circuit resulting from open circuit start switch or open circuit in reversing switch.
5. Locked rotor with start winding only in circuit, such as that resulting from an open main winding circuit or open circuit in reversing switch.
6. Running with both start and main windings in the circuit resulting from start switch failure in closed position or low voltage which prevents reaching switchover speed.

Protect your motor-driven equipment completely against motor burnouts . . . specify on your purchase orders — "These Motors to have KLIXON Type T Protectors."

METALS & CONTROLS
3311 FOREST ST., ATTLEBORO, MASS.
A DIVISION OF TEXAS INSTRUMENTS INCORPORATED

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MEASURES MOISTURE IN AIR

Only $33 net, with standard thermometer

With this simple Dewpoint Apparatus, made by Lectrodryer, you can directly read dewpoint of air or gas samples. Dewpoints as low as −76°C can be readily checked. Dewpoint temperature reading can be converted to absolute moisture content. Although the apparatus is simple, its accuracy compares favorably with more expensive gravimetric apparatus.

Available for immediate shipment. Write Pittsburgh Lectrodryer Division, McGraw-Edison Company, 326 32nd St., Pittsburgh 30, Pennsylvania.

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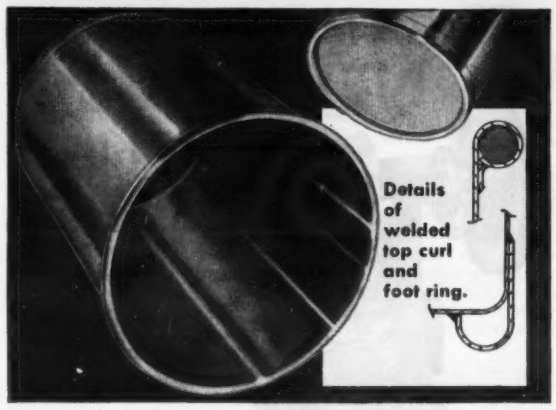

Pass any sanitarian's scrutiny!

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Hackney stainless steel food containers have a seamless cupped bottom section... crevice-free construction inside and out. Exceptionally strong, with open end curled over a steel reinforcing rod. Sturdy steel foot ring.

No container is easier to clean and keep clean. Sizes: 30 and 55 gallons. Covers available.

Pressed Steel Tank Company
Manufacturer of Hackney Products
1450 South 66th Street, Milwaukee 14, Wisconsin
Branch offices in principal cities

CONTAINERS AND PRESSURE VESSELS FOR GASES, LIQUIDS AND SOLIDS

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Type "A" Transparent inks. Instant-dry, waterproof, permanent, for any surface or material. New heavy duty replaceable nib. Available in 8 colors.

Aluminum seamless body, 3/8" cube felt nib, with pocket clip.
$1.59
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Completely new formula!
Speedry GIANT 'OPAQUE' MAGIC MARKER
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Type "DO" Inks
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16 oz: $4.35

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Industrial Services Division
DEPT. EQ-3, RICHMOND HILL 18, N. Y.

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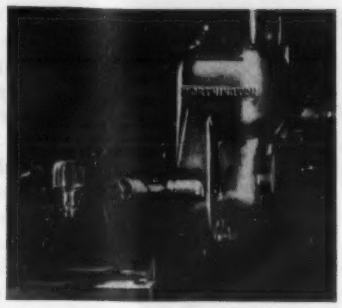
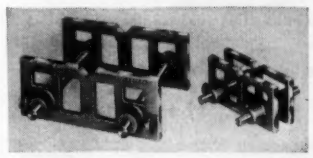
VARIABLE SPEED PULLEY in 1 to 15-hp sizes



Variable speed drive motor pulley in 1 to 15-hp sizes features an all-area greasing system, a single lubrication point on the end of the pulley, and a grease reservoir for easier maintenance. Design simplicity is embodied in single moveable flange and totally enclosed separate spring cartridges. Pulley can be mounted on the Worthington angle-matic motor base which maintains proper belt tension through entire range of speeds. Made by **Worthington Corp.**, Harrison, N. J.

▲ For more details circle NED-655 L9 on enclosed inquiry slip ▲

ADJUSTABLE PARALLELS have many machine and bench uses



Versatility of Little Champ adjustable parallels enables them to accommodate regular pieces, round or flat stock or, if desired, they can be adapted to support contours. Spread is limited only by the length of the connecting bars, supplied in centerless ground lengths of 6 and 10 in., for the 3 x 6 and 6 x 10-in. sizes, respectively. Maximum spreads with hubs facing in are 7 and 11 in. Both are top and bottom ground in sets to assure parallelism and have a 90-degree notch on one edge. Prices are $12.95 and $15.95. Made by **Threadwell Tap & Die Co.**, 230 Arch St., Greenfield, Mass.

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RUBBER CORD CONNECTOR locks any standard electric cap

Merely inserting any standard electric cord cap into the No. 50 Lock-On rubber cord connector automatically locks it tightly. It prevents poor connections and power interruptions as tugging will not disengage the cap. Pressing of two buttons on the connector releases the cap. Made by **Eagle Electric Mfg. Co.**, 23-10 Bridge Plaza S., Long Island City 1, N. Y.

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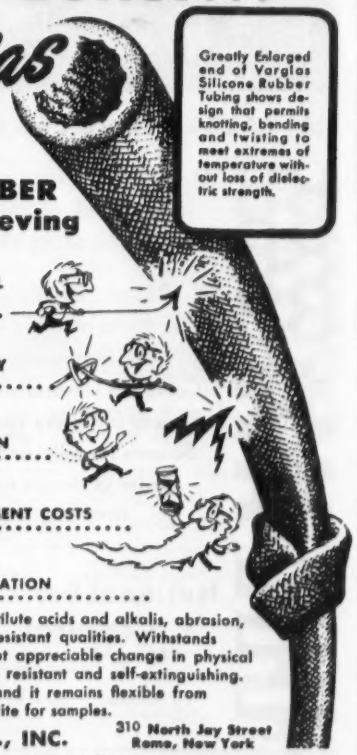
5 Ways Better...

Varglas

SILICONE RUBBER Tubing and Sleeving



Greatly Enlarged end of Varglas Silicone Rubber Tubing shows design that permits knotting, bending and twisting to meet extremes of temperature without loss of dielectric strength.

1. WON'T CRACK, PEEL OR CRAZE
2. GREATER FLEXIBILITY
3. HIGH DIELECTRIC RETENTION
4. LONG LIFE CUTS REPLACEMENT COSTS
5. VIVID COLORS FOR READY IDENTIFICATION

Resistant to all oils, alcohols, dilute acids and alkalis, abrasion, fungi as well as fine water resistant qualities. Withstands 250° C for 1,000 hours without appreciable change in physical or dielectric properties. Flame resistant and self-extinguishing. Twist, bend, wrap or knot it and it remains flexible from minus 90° F to plus 600° F. Write for samples.

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"SEALINE"
THERMO-PLASTIC HAND SEALER
For Polyethylene—Pliofilm and Other Thermoplastics

- "Teflon" coated roller eliminates intermediate material or liquid—Seals direct.
- Now available for 220 Volts. AC or DC—110V or 220V.

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4720 W. Lake St., Chicago 44, Illinois

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HOW TO DO THE DIFFICULT

Have happier workers and a happier boss both achieved by use of FAIRBANKS COST-CUTTER TRUCKS!

Just think of trucks as tools. Then you instantly recognize that the right trucks must make lighter work of materials handling. Your men with the right tool—the right truck—do more with less effort and with *greater safety*. You realize surprisingly large time and cost savings.

YOURS ON REQUEST: Big colorful catalog, #T-54, describes most complete line of trucks and applications. Write for your free copy of this valuable catalog today.

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They both know the best buy in tape . . .

ACCURATE TAPES
FRICTION . . . . RUBBER . . . . PLASTIC

Send today for our most recent bulletin describing details.

ACCURATE MFG. COMPANY
GARFIELD, NEW JERSEY

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SPITFIRE Grinding Discs

GREATER SAFETY MARGIN! Revolutionary new Aluminum Oxide Discs feature built-in barrier protection plus fully reinforced edges to eliminate limpness and excessive grit loss. Spitfire Discs provide 25% greater safety margin on "snagging" and "hang up" operations.

FASTER, COOLER CUTTING! Sharp, uniform cutting action makes full use of disc surface . . . speeds up grinding and sanding even under toughest conditions. Cooler running to add extra life, longer production performance.

A TYPE AND SIZE FOR EVERY JOB! Available in "Special," "Standard" and "Heavy Duty" discs for everything from light gauge metal sanding and polishing to high speed finishing operations. Grit sizes 16 through 180. Disc diameters include 6", 7", 8" and 9⅛" with ½" and ⅞" arbor holes.

Write for "Spitfire" folder!

JEWEL BRAND
COATED ABRASIVES
Belts • Rolls • Sheets • Discs • Specialties
ABRASIVE PRODUCTS, INC.
South Braintree 85, Massachusetts

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after 60 years

"SMART" SOLDERING STARTS WITH THIS SPOOL!

Kester Solder

KESTER FLUX-CORE SOLDER is always first choice with those who know solder. They like the way it helps keep production costs in line, speeds assembly, assures dependable performance. Yes, American industry is sold on Kester . . . how about you?

WRITE today for free Kester 78-page technical manual, "SOLDER . . . Its Fundamentals and Usage."

KESTER SOLDER COMPANY
4249 Wrightwood Ave., Chicago 39, Illinois
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Over 60 Years' Experience in Solder and Flux Manufacturing

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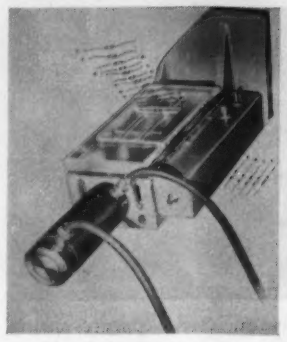
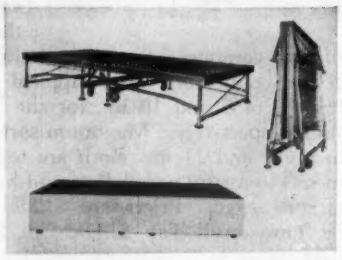
DIODE LEAD STRAIGHTENER also orients in one operation



Up to 3600 diodes per hour are handled by the Model H-100 lead straightener-orienter. Capacity is determined by the operator's ability to hand-feed diodes into the drop slot in the Lucite cover or by the succeeding machine. The leads are straightened between the plain surfaces of an air driven rolling mechanism, actuated manually or automatically. As straightening is completed, polarity is detected by a transistorized sensing circuit. As the next diode is being straightened, the first is rotated 90 degrees to put all anodes in the same position for feeding to the next machine. Straightener is designed for attachment to a Markem Model 69A color banding machine. Price is $2250. Made by **Carman Laboratories, Inc.**, Box 328, Bedford, Mass.

▲ For more details circle NED-665 L9 on enclosed inquiry slip ▲

PORTABLE STAGES support 100 lb per sq ft



Modular construction of these portable stages and chair stands enables them to be interchanged and locked together to produce platforms of various sizes and shapes. Each module folds or unfolds quickly with use of latches, locks, or levers. When folded, stage stands on 4-in. rubber casters and stores in 16¼ x 48-in. area. Stages are built of 14-gage structural steel and removable sealed and lacquered wood deck. Aprons are also removable. Stages support vertical live loads of 100 psf with 4-to-1 safety factor and sway loads of 27½ lb per lineal foot. Available sizes are 48 x 96 in. and 32 x 96 in., with heights of 8, 16, 24, 32, and 40 in. Steps are available. Made by **Sico Mfg. Co.**, 5215 Eden Ave. S., Minneapolis 24, Minn.

▲ For more details circle NED-666 L9 on enclosed inquiry slip ▲

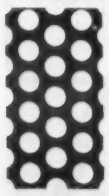
Electromagnetic Clutches

I-T-E Circuit Breaker Co.—Torque capacities from 1.8 through 13,000 lb-ft comprise line of electromagnetic clutches detailed in 20-page Bulletin 6304-1B. These Electro Clutches provide instantaneous push-button or automatic programming control of shaft-driven machinery in various fields. Booklet covers six series of clutches, including new stationary-field units, in separate sections.

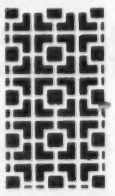
▲ For more details circle NED-667 L9 on enclosed inquiry slip ▲

PERFORATED

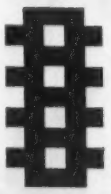
METALS - PLASTICS - FIBRE BOARD

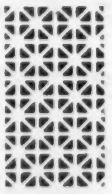


Make your selection from a large stock of standard perforating dies.



Round - Square - Slot
Perforated Grilles
Decorative Metals
Complete Decorative Panels
Screens for heavy road work
Screens for pulp and paper
Or let us design to your specifications.





National Perforating Corporation
42 Parker Street
Clinton, Massachusetts

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HOBBS *Introduces* NEW JACO Tube Cutter

Cuts any resilient tubing without "witness" marks

With this new cutter — only one of its kind — you cut any rubber or synthetic tubing up to ½" O.D. without leaving witness mark or ridge on the tube end. Eliminate marks that cannot be eliminated by any other power cutter.

Only the new Jaco Cutter supports the outside diameter of the tube while the cut is made. In regular production, you can accurately measure tube lengths up to 80,000" long and cut off two lengths per stroke at rates up to 240 pieces per minute.

Send for details now — revolutionize your tube cutting.

HOBBS Manufacturing Company
EST. 1888
41K Salisbury St., Worcester 5, Mass.
Offices and Representatives in Irvington, N. J.; Chicago, Ill.; Cleveland, Ohio; Greenville, S. C.; Louisville, Ky.; Toronto, Ont. and other major cities.
585-8

WINDERS & STANDS • POWER & HAND SHEARS • SLITTERS • DIE PRESSES

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TOWNSEND LOCKBOLTS now available in Stainless Steel for greater strength . . . corrosion resistance

If you need extra strength in fastening your assembly—plus corrosion resistance—you can get both now with Townsend 18-8 stainless steel lockbolts.

Townsend stainless lockbolts are vastly easier to install—for example, they eliminate the back breaking work of bucking stainless rivets which work-harden rapidly.

Write today for information to **Engineered Fasteners Division, P.O. Box 71-G, Ellwood City, Pennsylvania.**

Licensed under Huck patents RE 22,792; 2,114,493; 2,527,307; 2,551,048; 2,551,049 and 2,754,703

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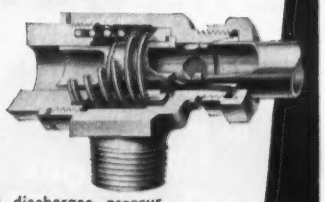
split-second air dumping with . . . FAWICK quick release valves



- Instantaneously discharges pressurized air from any pneumatic pressure system
- Fast, positive valve actuation by pressure differential
- Precision built, self cleaning, never needs lubrication
- Available in ⅜" to 1" sizes (outlet pipe thread)

Specify them for "quick-release" of pressurized air.

FAWICK AIRFLEX
FAWICK AIRFLEX DIVISION
FAWICK CORPORATION
9919 Clinton Rd., Cleveland 11, Ohio
In Canada, Fawick Canada, LTD., Toronto

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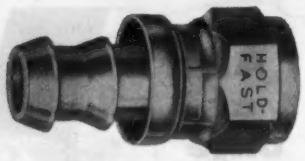
PUSH- and it's on!



ANCHOR®

HOLD-FAST

Low Pressure, Reusable Couplings

ARE EASY TO APPLY!

Speedy assembly — in the field, on the road, in the shop — is the outstanding feature of this new, hard gripping, low pressure coupling!

A few drops of oil, then push the hose on the stem until it seats against the bottom of the protective cap. The stem barbs grip the hose tightly to make a blow-off proof connection for pressures to 250 psi.

Disassembly is just as easy — one cut with a knife, a sharp push to the side and the hose pops off the coupling stem.

Anchor Hold-Fast Reusable Couplings enable you to make better, faster, connections for scores of low pressure applications in industrial, agricultural and automotive fields.

For high, medium or low pressure application use one of Anchor's many styles of reusable couplings available.

Andy Anchor says:

Catalog Supplement No. 302 gives complete description of Anchor "Hold-Fast" Couplings. Catalog 302 describes all other reusable couplings. Write for them today!

ANCHOR COUPLING CO. INC.

364 No. Fourth St., Libertyville, Ill.
Branch Plants: Plymouth, Mich., Dallas, Tex.

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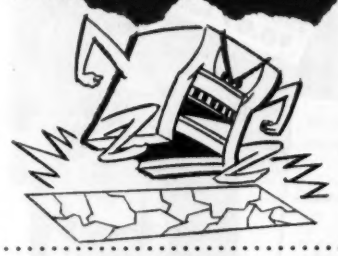
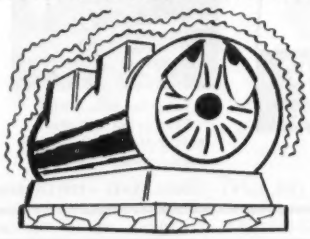
If you have any of these MACHINERY FOUNDATION PROBLEMS in your plant . . .



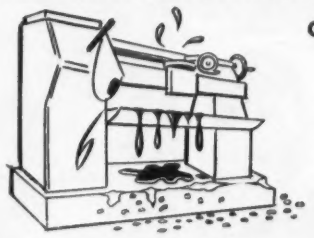
IMPACT

Eliminate cracked, shattered bases under drop forges, presses, shears and other heavy equipment with high-strength No. 648 Grout.



VIBRATION

Avoid damage to valuable equipment! No. 648 Grout actually bonds to metal . . . permanently anchors compressors, pumps, engines and motors.



OIL OR CHEMICAL DAMAGE

Prevent foundation crumbling and spalling! Non-porous No. 648 Grout is completely impervious to oils . . . resists most chemical attack.

8808-CC

you need

CEILCOTE No. 648 GROUT

Only Ceilcote No. 648 Grout combines high strength with corrosion resistance and metal-bonding qualities to end costly damage, repairs, and downtime. No. 648 Grout handles easily . . . sets-up within 24 hours without shrinking or settling . . . yet is five times stronger than concrete! Get all the facts before starting your next grouting job.

Send for Technical Sales Bulletin today!

ANOTHER FIRST BY CEILCOTE

CEILCOTE

THE CEILCOTE COMPANY, INC.
4838 Ridge Road, Cleveland 9, Ohio

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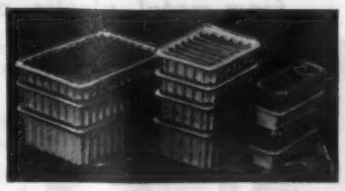
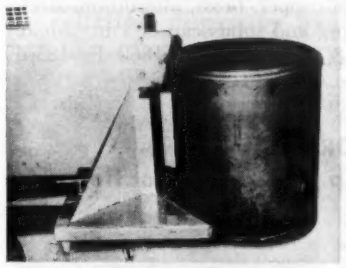
PLASTIC TOTE BOX
made with ribs for dividers



Vacuum formed plastic tote box is made of Seiberling Seilon S-3, a high impact polymer that resists chemicals, oils, and solvents. It is nontoxic and has ribs for easy insertion of dividers. A snap-on cover facilitates stacking and keeps out dirt and dust. Plastic material is light in weight, minimizes noise, and helps prevent parts damage. Eleven sizes range from $9\frac{3}{4}$ x $2\frac{7}{8}$ x $2\frac{1}{2}$ in. to 20 x 15 x 9 in. Prices range from $1.41 to $7.44 without covers. Made by **Export Corp.**, 13310 Foley Ave., Detroit 27, Mich.

▲ For more details circle NED-674 L9 on enclosed inquiry slip ▲

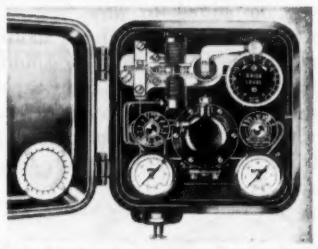
DRUM HANDLERS
six models for one or two drums



Mounted on an industrial truck carriage, slipped on the forks, or over the lip of a shovel, Grip-O-Matic mechanical handlers pick up and convey every type of fiber and metal drum. New or battered containers, with open or closed tops, are securely gripped one or two at a time. They are released only when set down by the gripping head consisting of two hardened bead-gripping jaws. Handlers, adjustable to various drum heights, are offered in six models. Made by **Little Giant Products, Inc.**, 1591 N.E. Adams St., Peoria, Ill.

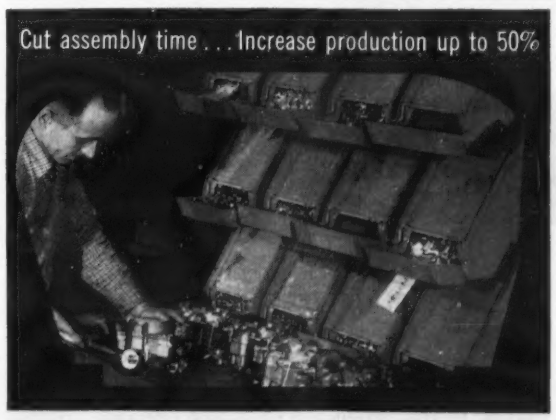
▲ For more details circle NED-675 L9 on enclosed inquiry slip ▲

LEVEL CONTROLLER
has proportional, reset controls



Type 2502 Level-Trol provides a proportional and a reset level controller in one compact case. Adjustments for both devices assure stable control of liquid level with virtually no deviation from set point. The proportional band is adjustable from 10 to 200 per cent, and reset time from 0.005 to 1 min per repeat. Pilot can be equipped with bellows for 3 to 15 or 6 to 30 psi output range and can be furnished to give direct or reverse action. Level position can be adjusted for any point within the length of the float. Calibrated dials indicate the setting. Made by **Fisher Governor Co.**, Marshalltown, Iowa.

▲ For more details circle NED-676 L9 on enclosed inquiry slip ▲



INSTALL **NESTIER HOPPER RACKS**

Amazing case studies prove how much Nestier Hopper Racks can speed production. They provide a constant supply of parts at workers' fingertips. They eliminate re-handling of parts on the job, and permit rapid replacement of empty units. Nestier Hopper Racks can be filled at a central point to give more accurate inventory control. Write for literature today. Dept. D-3.

NESTIER® FIRST IN SMALL PARTS HANDLING

NESTIER CORPORATION Subsidiary of THE METAL SPECIALTY CO.
4519 Este Ave., Cincinnati 32, Ohio

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SHUT OUT RUST CATHODICALLY!

USE **DRYGALV** ZINC COATING

DRYGALV coating is 95% metallic zinc:

- stops rust on iron and steel—**permanently**
- stops corrosion at welded joints—**permanently**
- repairs damaged galvanized surfaces—**permanently**

Use DRYGALV and end rust worries for good! Only a minimum of surface preparation is necessary. DRYGALV can be applied over rust, partially painted surfaces or clean metal. It dries to the touch in 15-30 minutes, can be painted over in only 8 hours where color is desired. DRYGALV is non-toxic; protects against the effects of sea water. *It is applied by brush or spray.*

PROTECT with DRYGALV!

Write, wire or call for other details and prices today.

AMERICAN SOLDER & FLUX CO.
19th & WILLARD STREETS,
PHILADELPHIA 40, PA.
phone: BA6-1800

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THE FIRST LIQUID HARDENER EVER MADE FOR CONCRETE FLOORS

To give hardness-in-depth!

LAPIDOLITH

Not a coating
Not a film . . . but a hardener that acts below the surface to become an integral part of the concrete floor

a product of SONNEBORN Research

Mail Coupon today for money-saving features and the BONDED GUARANTEE

L. SONNEBORN SONS, INC.
Building Products Division—Dept. N-119
404 Fourth Avenue, New York 16, N. Y.

☐ Send complete information on LAPIDOLITH and the BONDED GUARANTEE.
☐ Also include free copy of 128 page Building Construction and Maintenance Handbook.

Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State____

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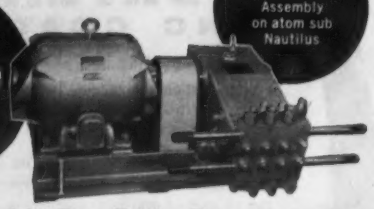
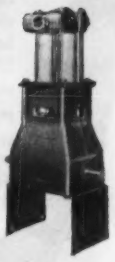
for PRESSURES to 6000 lbs. TEMPERATURES to 300° F.

John BEAN high pressure pumps



Rugged, compact John Bean Triplex Pumps are the answer for high pressure pumping applications, among them coolant pumping in atomic reactors. Pressures range from 1000 to 6000 psi, fluid temperatures to 300° F. Important design features include:

- Lifetime Sapphire plungers
- "Roto-splash" drive end lubrication
- Distortion-free cast iron housings
- Free-acting ball-type valves, replaceable valve seats



also: John Bean vertical duplex pumps — pressures to 1000 psi, temperatures to 200° F.

Send information request form — today!

John BEAN Division of Food Machinery and Chemical Corporation
INDUSTRIAL SALES DEPT.
LANSING 4, MICHIGAN SAN JOSE 1, CALIFORNIA

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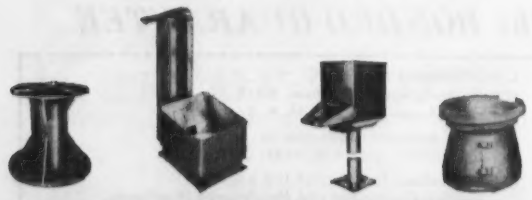
Achieve efficient, automatic production, and produce more all along the line, by integrating equipment designed and built by AUTOMATION for automation.

For example, vibratory parts feeders perform more efficiently on an engineered base permitting maximum power transmission. Either the side delivery or the elevating conveyor supply hoppers (with automatic paddle type relay switch to regulate delivery) hold large quantities of parts and are real labor savers. These are just a few advantages that make automation work and pay for itself.

You can depend on the proven talents at AUTOMATION DEVICES, INC.—enlist their help. Write today for the informative bulletin on "Packaged Automation."

PEECO & VFC DIVISIONS ... TWO GREAT NAMES IN PARTS FEEDING



AUTOMATION DEVICES INC.
ERIE, PENNSYLVANIA

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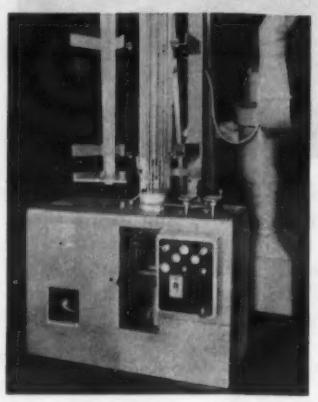
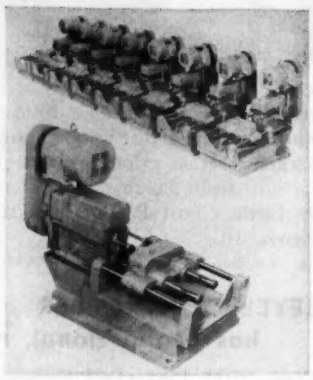
HIGH SPEED CUT-OFF SAW produces 1/4-7-in. burr-free lengths from metal, plastic, paper materials



Maximum production rate of 100,000 pieces of 3/16-in. diameter tubing per hour or 25,000 pieces of 1-in. tubing per hour is claimed for this vertical cut-off saw. It produces burr-free lengths of tubing or solids of various shapes with close tolerances and without distortion. Material up to 20 ft long is gravity fed vertically into the saw which occupies a 40 x 50-in. floor area. Saw affords operator safety with its enclosed saw blade and vacuum type chip collector. All shapes of copper, brass, aluminum, steel, plastic, and paper tubing and solids can be cut. Made by **National Copper & Smelting Co.**, 1862 E. 123rd St., Cleveland 6, Ohio.

▲ For more details circle NED-682 L9 on enclosed inquiry slip ▲

MULTISPINDLE DRILL UNIT features step and repeat action



Multiple-spindle Peck-Drilling units operate with a step and repeat action to minimize shock. At the end of each step, drills automatically pull out the chips, then, at the start of the next step, drills stop just short of the previous depth. This cuts down on both breakage and overheating of drills. Units can be added to any existing machine without tooling changes. They are adaptable to any multiple-spindle application up to 12 in. stroke, and up to 5-hp capacity. Number of steps possible is infinitely variable. A 5-hp unit will drive from one 1-in. diameter drill to ten 1/4-in. diameter drills. Made by **Drillunit, Inc.**, 3267 Wight St., Detroit 7, Mich.

▲ For more details circle NED-683 L9 on enclosed inquiry slip ▲

Surface Treatment of Metal

Ransohoff Co.—Machinery and systems for metal surface processing, such as cleaning, washing, rinsing, drying, spraying, and flow and dip coating are subject of 40-page catalog. Drum-type, conveyor, combination drum and conveyor, and monorail machines, Ransomatics, and complete automatic finishing systems are covered.

▲ For more details circle NED-684 L9 on enclosed inquiry slip ▲

COMPLETE TECHNICAL DATA ON LARGE OD THIN-WALL TUBING

Your personal copy of Data Memorandum No. 4 is now ready, containing complete information on large OD thin-wall tubing by Superior. Analyses, sizes, shapes, tempers, welding, lengths, production limits, and tolerances are all included, along with instructions on ordering.

Superior makes large OD thin-wall tubing in a wide range of analyses, including stainless, alloy and carbon steels, nickel and nickel alloys, beryllium copper, and titanium. Sizes range from 5/8" OD up to 2 1/2" OD in certain analyses.

What other manufacturers classify as "specialty" tubing is standard at Superior. Let us help you with your tubing problems. For your free copy of Data Memorandum No. 4, write Superior Tube Co., 2018 Germantown Ave., Norristown, Pa.

Superior Tube

The big name in small tubing
NORRISTOWN, PA.

All analyses .010" to 5/8" OD—certain analyses in light walls up to 2 1/2" OD

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with Clipper HOOKS and LACERS

You can lace belts up to 12 inches wide in one operation with Clipper Belt Hooks and Lacers. For complete information on this time-saving method, send today for your free copy of Bulletin No. 157.

Clipper BELT LACER COMPANY
976 Front Ave., N. W., Grand Rapids, Michigan
Ask your Industrial Distributor for Clipper Products

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JARKE MINI-MODULE STOCK STORAGE RACKS

JARKE MANUFACTURING COMPANY
6333 Howard St., Chicago 48, Illinois

Send for details and FREE set of miniature plastic Mini-Modules for easy storage planning.

BAR AND FLANGE RACKS • WIRE COIL RACKS • CRANE GRABS • STEELMOBILE

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"Slickest visual control..."

states *Factory* magazine. Entries made directly with marking pencil on a rolling "Mylar" sleeve which *moves with time*, bringing deadlines constantly closer. Entries easily erased.

Send for *FREE GUIDE to Control Methods* with full-scale, sample chart section

Shows how Rol-a-chart controls 22 different items: orders, production, data processing, maintenance, dispatching, sales, etc. Also expert consultation service with no obligation.

Rol-a-chart Division
Conley, Baltzer & Steward, 494 Jefferson Street, San Francisco 9

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AERO-SEAL JET Hose Clamps have a thousand and one shop and maintenance uses for fastening hose, pipe, tubing and other clamping needs. Made of 302-18-8 stainless steel alloy, they last longer. Bands won't corrode. A few turns of the precision worm gear and they're tightly attached for keeps. Yet they can be removed in a jiffy and re-used over and over. Ask your supplier for genuine AERO-SEALS — Jet or regular.

Aero-Seal JET
QUICK-ATTACH HOSE CLAMPS

BREEZE CORPORATIONS, INC. 700 LIBERTY AVENUE UNION, N.J.

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SAFER HANDLING
of INDUSTRIAL LIQUIDS!

Eliminate in-plant accidents caused by slick floors and spilled inflammables! This TOKHEIM Hand Pump, for use on drums or skid-tanks, has 8′ hose—or spout outlet—prevents dangerous, wasteful slopping of oils and many other liquids. Speeds production. Pumps 20 gallons per 100 strokes. Ask your dealer, your Tokheim representative or write for list of liquids.

TOKHEIM High-Vacuum HAND PUMPS

General Products Division
TOKHEIM CORPORATION
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901
1656 Wabash Avenue **Fort Wayne 1, Ind.**

Subsidiaries: Tokheim International, A.G., Lucerne, Switzerland; GenPro Inc., Shelbyville, Indiana; Tokheim of Canada, Ltd., Toronto, Ontario

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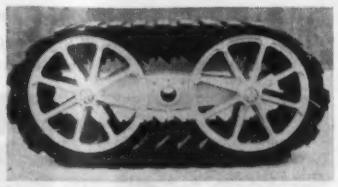
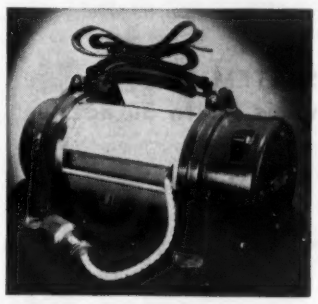
CRAWLER TRACKS
for mobile equipment and vehicles



Capacity of 10 tons per pair is built into Trac - Wheels, designed for replacement or OEM use on various types of mobile equipment. They have cast alloy steel wheels and track shoes, steel weldment rocker beam, flame hardened wheel rims, and shoes with hardened pins and bushings. Axle and spindles are lubricated by an Alemite central lubrication system. Over-all dimensions are 19¼ x 72 x 33¾ in. Standard track width is 18 in. and supporting area is 13½ sq ft per pair. Ball bearings are protected with oil seals. Made by **M. J. Crose Mfg. Co.**, 2765 Dawson Rd., Tulsa, Okla.

▲ For more details circle **NED-692 L9** on enclosed inquiry slip ▲

UNIVERSAL HOIST
lifting capacity exceeds 6000 lb

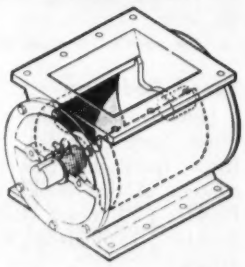


An antifouling mechanism consisting of a spring shroud device covering the drum prevents cable fouling and backlash in this 47-lb portable universal hoist. Compact and light in weight, it is operated electrically or manually and has a lifting capacity of more than 6000 lb. Hoist is powered by a three-phase 400-cycle reversible alternating current motor, or by a 24-v dc or 60-cycle ac motor. Enclosing the motor inside the cable drum and using compound differential planetary gearing gives the 16-in. long unit a high gear ratio. Made by **Garrett Corp.**, AiResearch Mfg. Div., 9851 Sepulveda Blvd., Los Angeles 45, Calif.

▲ For more details circle **NED-693 L9** on enclosed inquiry slip ▲

ROTARY VALVE
double seal prevents leakage

Double seal and close clearances prevent leakage in the closed position of this rotary valve. It has unrestricted opening to permit free flow of pulverized materials and is designed for use under silo deck slabs and bins. Bearings are dust-tight. Sticking caused by packed material is prevented by knife edges and V-slots at the end of the rotor. Valves adapt to either manual or remote controlled motor operation. Made by **Fuller Co.**, Catasauqua, Pa.



▲ For more details circle **NED-694 L9** on enclosed inquiry slip ▲

EDMONT CASE NO. 633: Strapping steel wire around boxes, $6.50 a dozen leather palm gloves lasted 2 shifts. No. 161 Super Werx gloves, of vinyl-impregnated fabric wore 8 shifts, reducing glove costs 73%.

New glove outwore leather 4 to 1

No. 161 Super Werx

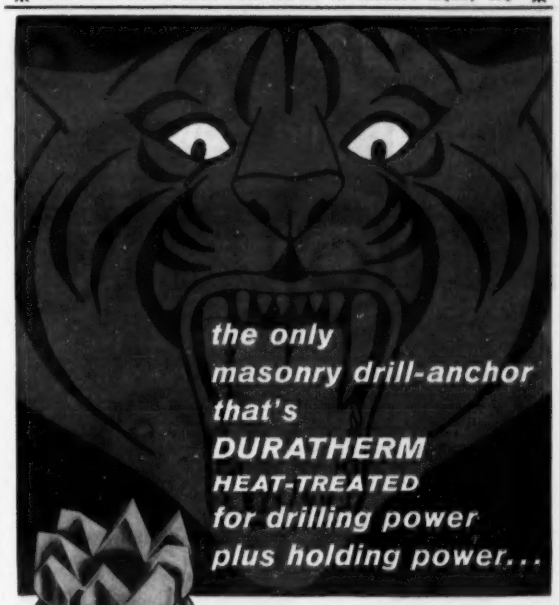
In the case above, job-fitted gloves were able to save at least $4.74 on every dozen pairs. Edmont recommended the vinyl-*impregnated* Super Werx because this heavy duty version of the popular Werx glove is designed to replace ordinary leather for many operations. It resists abrasion, cuts, and snags, is sure-gripping and 100% washable. Super Werx also outwears 18 oz. cotton gloves 6 to 1.

Free Test Offer to Listed Firms: Tell us your operation. From more than 50 types in both coated and impregnated fabric we will recommend the correct glove and send samples for on-the-job testing.

Edmont JOB-FITTED GLOVES

Edmont Manufacturing Company
1240 Walnut Street, Coshocton, Ohio
In Canada write MSA, Toronto

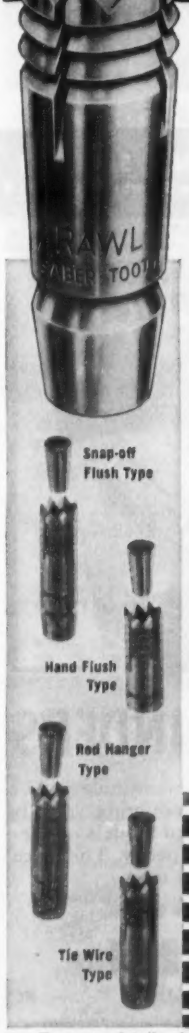
▲ For more details circle **NED-695 L9** on enclosed inquiry slip ▲



RAWL
SABER-TOOTH
DRILL-N-ANCHOR

for fastening any kind of fixture to any kind of masonry

- hardened so teeth keep their edge, drill a full hole fast
- toughened so teeth won't snap off, even in hardest concrete



DRILLS FAST...HOLDS TIGHT...

- Drills its own hole in the hardest concrete, develops highest holding power.
- Tapered holding ridges around body make the Saber-Tooth bite harder, grip tighter.
- Expander slots assure complete, even expansion when anchor is driven home—teeth undercut hole deep in the masonry.
- All-steel construction resists shock, vibration, fire, rust.
- Snap-off joint is strong enough to hold during drilling, yet breaks clean after the anchor is in place.

...CUTS COSTS ALL-AROUND

- The anchor is the drill...no separate drills to handle or sharpen...no problem of matching sizes.
- "Core drill" design saves drilling time and labor.

THE RAWLPLUG COMPANY, INC.
256 Petersville Road New Rochelle, N.Y.
Please rush my Saber-Tooth sample and complete facts.
Name
Firm
Address
R9

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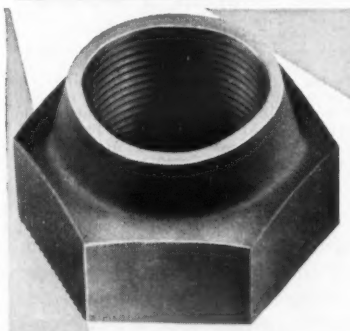
New One-Piece "Conelok" with prevailing torque



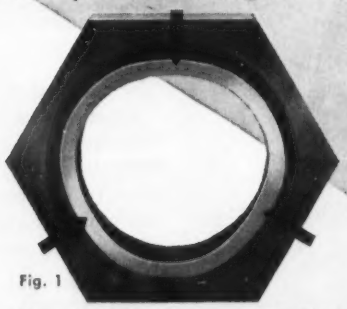


Fig. 1

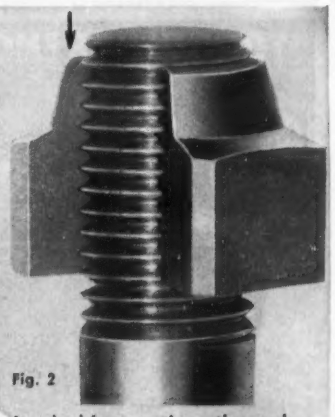


Fig. 2

Three sectors of the tapered portion of the CONELOK nut are preformed inwardly (Fig. 1). When the Nut is applied to a bolt, these conforming sectors are elastically returned to a circular configuration and create an inward and downward pressure which produces intimate contact between the load carrying flanks of the nut and bolt threads (Fig. 2). The shape of the cone sector displacement insures conformity with the mating bolt and maximum friction contact area. . . . The closed stress path in the locking portion of the nut and the advantageous distribution of locking pressure, produce a locking device of high fatigue life . . . and equivalent locking force is exerted at only a fraction of the stress of any slotted type locknut. CONELOK maintains its locking action through many re-applications. . . . It is adaptable to high, and low torque assemblies . . . to high torque stop-nut applications . . . and may be obtained in sizes from No. 10 through 1½", Full and Thick dimensions are "Standard". . .

Send for brochure which includes complete engineering specifications.

NATIONAL MACHINE PRODUCTS COMPANY
an SPS company 44250 UTICA ROAD UTICA, MICHIGAN

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Johnson Model J (Wet or Dry) Cuts anything in your stock pile. 10" rounds, 18" flats, structurals or odd shapes. Centralized controls, special safety features, variable speeds.

that costs you NOTHING!

True, you pay the low initial purchase price, but the big, rugged Johnson Model J is so well engineered, so dependable, so troublefree—so versatile, fast and accurate, that it quickly pays for itself in tangible savings. One Johnson metal cutting band saw . . . or a battery of them, will pay you big dividends in time, labor—smooth production and eliminate scrap.

Write Today . . . for your copy of the new Johnson catalog. All models and accessories described, illustrated in full.

Johnson MANUFACTURING CORPORATION
Barnes & Taylor Sts. Albion, Michigan

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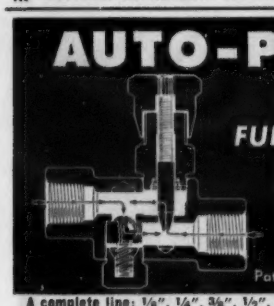
AUTO-PONENT®
HYDRAULIC
FULL FLOW VALVES



Flow Control, Needle, Check, for HYDRAULIC Power
Model KF Flow Control Valve with Dial and Knob adjustment for direct reading and duplicating reference. Now available in Aluminum for 3000 psi.
Pat. #2,841, 174

A complete line: 1/8", 1/4", 3/8", 1/2", and 3/4" female Dryseal Pipe Sizes in all models and types. Equivalent Aeronautical Tube Sizes on special order.

MINIMUM PRESSURE DROP AND POWER LOSS . . . Oversize ports and passages give maximum flow at minimum pressure drop, insure greater accuracy and response in hydraulic or large volume air cylinder control.

EASY FLOW ADJUSTMENTS under full pressure. Seal located at port to eliminate air or dirt traps. Gland structure equally effective on pressure or vacuum.

SENSITIVE, CHATTERLESS BALL CHECK . . . Patented design insures rapid ball movement to open or close at low differentials.

FORGED BODIES permit higher pressures with wide safety margins. Aluminum—3000 psi; Steel and Stainless Steel—5,000 psi. Pressure ratings based on better than 5 to 1 safety factor. All internal parts are Stainless. Write for illustrated catalog.

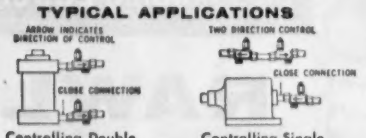
Model F Standard Flow Control Valve or Model N Needle Valve

Model KF Knob and Dial Flow Control Valve or Model KN Needle Valve.

Model PF Knob and Dial Flow Control Valve or Model PN Needle Valve for panel mounting.

Model C Check Valve for In-Line Mounting.

TYPICAL APPLICATIONS



Controlling Double Acting Cylinder — Controlling Single Acting Cylinder

AUTOMATION AUTO-PONENTS INC. COMPONENTS
2929 GRANT STREET
BELLWOOD (Chicago Suburb) ILLINOIS

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HOW TO ENGINEER SPECIFY ORDER PRICE...

AIR POWER CYLINDERS

Here is complete engineering data on Hannifin's newest line of air power cylinders. Every mounting style is fully dimensioned in all sizes. Standard models or special modifications are made easy to specify. The price sheet, too, is easy to understand, easy to use.

Write for Bulletin 213-B.

HANNIFIN

Hannifin Company, 527 South Wolf Road, Des Plaines, Ill.
(Hannifin Company is a division of Parker-Hannifin Corporation)

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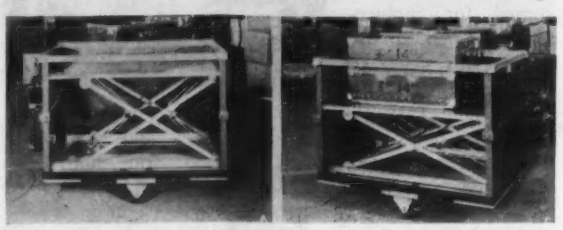
BOX HAND TRUCKS
keep contents at waist level

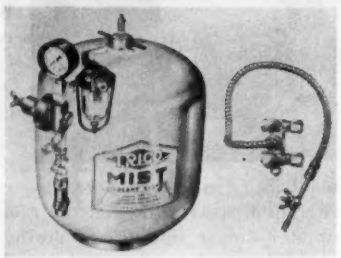
Heavy duty torsion springs raise or lower the hardwood bottom of Unilevel box hand trucks depending upon the weight of the contents. This "floating"



bottom feature makes it possible to handle materials at the top of the truck without bending over for objects near the bottom. Regardless of weight distribution, the bottom remains level and in constant alignment at all times because of a pantograph mechanism. Wood, metal, and plastic products, subassemblies, and textile products can be handled. Various lengths, widths, depths, and strokes are available in trucks with capacities up to 450 lb. Made by **National Vulcanized Fibre Co.**, 1059 Beech St., Wilmington 99, Del.

▲ For more details circle NED-700 L9 on enclosed inquiry slip ▲

MIST COOLANT SYSTEM
dispenser services up to 30 nozzles



One central 5-gal pressurized dispenser is used with single or ganged control valves to enable the Trico - Mist coolant system to service banks of machinery or a number of stations. It accommodates up to 30 nozzles, at a height of 15 ft or parallel distance of 100 ft. Two 1/4-in. OD tubing lines carry coolant under pressure from the dispenser to the valves located close to the work. Air and liquid lines are individually adjustable to feed from a solid stream to a fine invisible mist, or compressed air for cooling only. Lines can be shut off without affecting other valve adjustments, or additional valves can be added. Adjustable holders permit the nozzle to be directed where needed. System is offered with manual or solenoid shutoff. Made by **Trico Fuse Mfg. Co.**, 2948 N. Fifth St., Milwaukee 12, Wis.

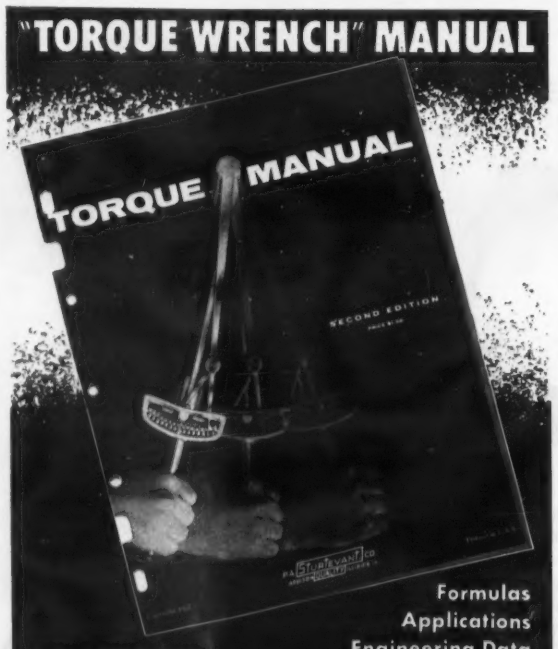
▲ For more details circle NED-701 L9 on enclosed inquiry slip ▲

Speed Reducers

Hewitt-Robins Inc.—24 pages of selection procedures, rating tables, and other technical data for those specifying power transmission machinery are content of two booklets on two speed reducer types. Booklet J-19 covers shaft-mounted speed reducers, and Booklet J-18 deals with in-line and right-angle helical drives.

▲ For more details circle NED-702 L9 on enclosed inquiry slip ▲

"TORQUE WRENCH" MANUAL



Formulas
Applications
Engineering Data
Screw Torque Data
Adapter Problems
General Principles

SENT UPON REQUEST

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

Manufacturers of over 85% of the torque wrenches used in industry

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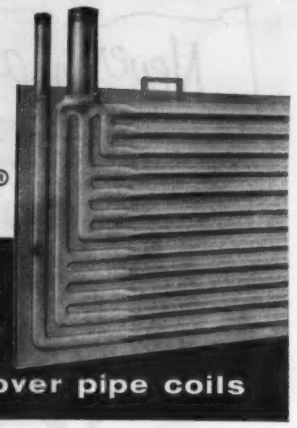
NEW
MULTI-ZONE
PLATECOIL®



Years ahead features plus time-proven advantages over pipe coils

New MULTI-ZONE configuration, operating pressures up to 250 psi, plus the time-proven advantages of PLATECOIL over pipe coils open up a wider than ever range of tank and process heating and cooling applications. Get the facts now on the new MULTI-ZONE PLATECOIL line.

WRITE FOR NEW BULLETIN P57.

PLATECOIL® DIVISION
TRANTER MANUFACTURING, INC.
LANSING 9, MICHIGAN

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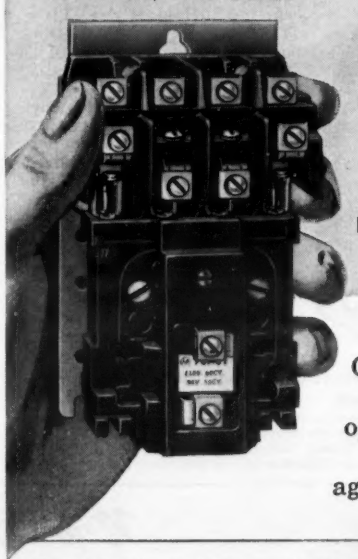
NEW
Convertible Contact CONTROL RELAY



BULLETIN 700 TYPE BR

Change contacts from normally open to normally closed (or back again) in seconds!

Converting the contacts on the new Type BR relays is handled in three easy steps—using only a screwdriver. To change from normally open contacts to normally closed, simply remove lower front terminal; rotate movable contact, and then replace front terminal, but in the inverted position. That's all there is to it. Reverse the above process to change contacts back to N.O.

The unusual flexibility of these new A-B convertible contact relays makes them ideal for control systems that may be altered or rewired from time to time. And with the Type BR providing either N.O. or N.C. contacts, relay inventories are slashed. These rugged relays are good for millions of trouble free operations, and their double break, silver contacts never need servicing.

Bulletin 700 Type BR relays are made with from two to six poles. The seven or eight pole construction adds either one or two poles to the base. This can easily be done in the field. All poles are convertible from N.O. to N.C. Write for full details.

Allen-Bradley Co., 1334 S. Second St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY
Member of NEMA
Quality Motor Control

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AJUSTRITE® CHAIRS AND STOOLS

DRAFTING CHAIR *Model RUC-2230*

- 2 inch upholstered seat
- full swivel seat
- 2-way adjustable backrest
- no soiled hands when adjusting seat
- Three sizes: 20" to 28"—24" to 32"—28" to 36"
- Gray, green, beige or brown finish

Also available with round metal or wood seat; or formed plywood or solid hardwood saddle seat.

FREE TRIAL

Use an AJUSTRITE chair or stool for 30 days without obligation. Prove to yourself the many advantages AJUSTRITE offers in comfort, utility and economy. Write today—we'll do the rest.

10 YEAR GUARANTEE

32 Models for Factories • Schools • Laboratories • Hospitals • Offices

AJUSTO EQUIPMENT CO.
515 CONNEAUT ST. • BOWLING GREEN, OHIO

For more details circle NED-706 L9 on enclosed inquiry slip

MIDGET MUFFLERS Ready!

Sensational!

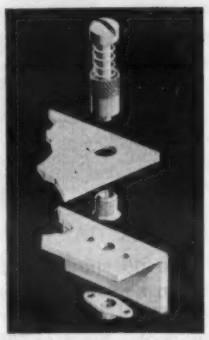
Industry's handiest new devices! They're made from polyether foam enclosed in anodized aluminum—they silence noises caused by exhausting air. Rust-proof; common solvents clean 'em! Use M-1 or 2 for 1/8" or 1/4" exhaust ports; M-3 for 3/8" port. Order your Mead Midget Mufflers direct or send for name of nearest Mead Distributor.

Prices slightly higher West and Canada

MEAD SPECIALTIES COMPANY
4114 N. Knox Ave., Dept. NA-119 Chicago 41, Ill.

For more details circle NED-707 L9 on enclosed inquiry slip

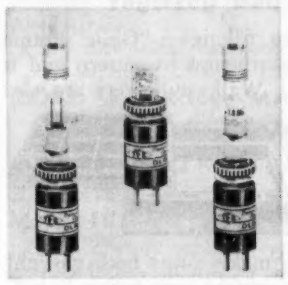
SELF-RETAINED FASTENER
designed for electronic packaging



No special tools are required to install this self-retained fastener for electronic modules or other removable components. Possibility of lost or misplaced screws falling into circuitry is eliminated. Captive screw mates with any standard internally threaded member. Unit is fully retractable, remaining completely flush in unlocked position. It has 1/8-in. adjustment for different panel thicknesses. Made by **Illinois Tool Works,** Calinoy Div., 12917 Cerise Ave., Hawthorne, Calif.

For more details circle NED-709 L9 on enclosed inquiry slip

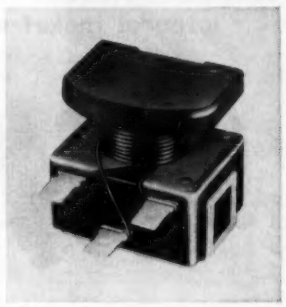
INDICATOR LIGHTS
miniature lamps changed from front



DLR Series of miniature indicator lights uses standard miniature neon or incandescent lamps of the midget flange type. Unit is mounted with a single nut in a 3/8-in. hole. Two-terminal construction permits isolation from the metal body. Lights are replaced from the front and can be equipped with standard color lenses. Made by **Transistor Electronics Corp.,** 3357 Republic Ave., Minneapolis 26, Minn.

For more details circle NED-710 L9 on enclosed inquiry slip

MOTOR STARTING RELAY
rated up to 30 amp, 115 v

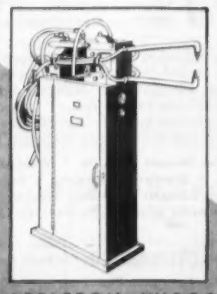


Typical applications for this current-type motor starting relay are on motors for single-phase ac appliances, oil burners, submersible pumps, and other stationary equipment having starting loads over 10 amp. The all-welded Series 6409 relay is rated up to 30 amp, 115 v. Silver-cadmium oxide contacts, which place two "breaks" and two "makes" in series, assure relay life up to 1 million cycles at 5 amp, 230 v, or 10 amp, 115 v. Current required to close switch ranges from 3.5 to 30 amp, whereas opening current is a minimum of 15 per cent less than pick-up or closing current. Special requirements can be met. Made by **Texas Instruments Inc.,** Metals & Controls Div., 34 Forest St., Attleboro, Mass.

For more details circle NED-711 L9 on enclosed inquiry slip

HANDY... any way you look at it

Ball bearing suspension ring takes all the weight and much of the work out of welding with a Miller MPS water-cooled portable spot welder. Choice of manual or air operated models, all with timers. 6" tongs secure work with pressure to 600 pounds. Model MPS-10-KVA weighs 79 lbs., welds up to 3/16" thickness; model MPS-20-KVA, 91 lbs., handles material to 1/4"; air operated models average 53 lbs. more. Wide choice of tongs.



Steel pedestals are available for both models.

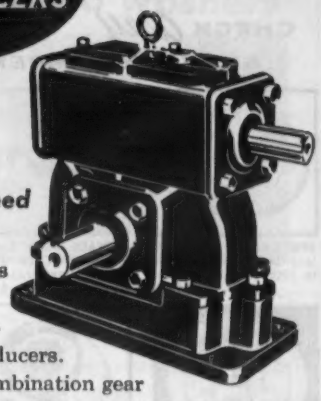
miller ELECTRIC MANUFACTURING COMPANY, INC.
APPLETON, WISCONSIN

distributed in Canada by CANADIAN LIQUID AIR CO., LTD., Montreal

For more details circle NED-708 L9 on enclosed inquiry slip

Abart SPEED REDUCERS

FOR ECONOMICAL TROUBLE-FREE POWER TRANSMISSION



- *compact design*
- *rugged construction*
- *a type for any speed reduction need*

Choose from Abart's complete line of space-saving, precision-built speed reducers. Worm, spur and combination gear models—single or double reduction—fractional to over 400 hp. ratings, ratios to 10,000 to 1. Supplied in 75 different types and sizes with any desired shaft arrangement.

Send now for Abart's handy pocket size engineering data book and catalog.

ABART GEAR and MACHINE CO.
4831 WEST 16th STREET • CHICAGO 50, ILLINOIS

For more details circle NED-712 L9 on enclosed inquiry slip

Mid-western glass plant conveys air filters through assembly, shipping and boxing operations on Wendway.

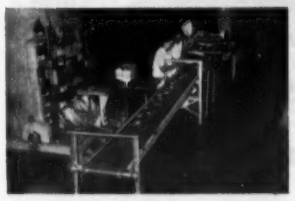
WENDWAY CONVEYS *Anything*

Wendway easily adapts and installs with existing equipment to speed processing and eliminate handling.

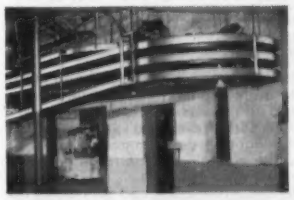
...ANYWHERE!

● If you move anything—product, carton, package, bag or assembly—from one machine to another...one room to another, you profit by installing a Wendway Light Product Conveying System. And no matter how you move those products now, Wendway can do it better. Faster, safer and more economically, too!

Because...Wendway is the most versatile, powered conveyor ever offered to industry. Readily available in a variety of standardized linked rod, belt widths on straight sections, curves, switches, multiple tiers—any combination you require to convey anything, anywhere.



Short, single tier units save storage space, equipment and man hours. Installations may be portable if desired.



Ceiling-mounted Wendway saves valuable floor space. Excellent for cooling or drying operations.

Wendway Slat-Type Conveyors—for Heavier, More Difficult Applications

Developed to meet the need for a highly dependable, extremely versatile, adaptable system with greatly increased carrying capacity (70 lbs. per lineal foot). Available in 24", 30" and 36" standard widths in powered or straight sections. Larger widths, special order.

Above: Close up of powered curve shows how individual slats smoothly negotiate curve without variation in spacing. Products ride smooth, safe, quiet.

Above: This photo illustrates the rugged, clean lined simplicity of the Wendway slat-type powered conveyor so popular for heavy duty applications.

WRITE TODAY . . . for additional information, specifications on a Wendway System to match your requirements. Recommendations without obligation.

UNION STEEL PRODUCTS CO.
Industrial Conveyor Division
ALBION, MICHIGAN

For more details circle NED-713 L9 on enclosed inquiry slip

PANDUX® THERMOMETERS

Write for FREE temperature conversion chart...C to F and F to C 0°K. to 5612°F.

CHECK any SURFACE TEMPERATURE!

SPOT-CHECK® All Stainless Steel. Four ranges to 1000°F. With magnet $4.00

SURFACE Three Ranges, minus 50°F. to 370°F. Also in Centigrade. With magnet..... $6.75

MAXIMUM-MINIMUM All Stainless Steel. Four ranges to 1000°F. With magnet..... $6.75

HI-HEAT Two Built-In Magnets. 50°F. to 750°F. $6.75

MAXIMUM - MINIMUM RECORDING With replaceable Chart. Minus 50°F. to 250°F..... $19.50

SURFACE PYROMETER 10" Surface Tip. Two ranges to 2300°F. Complete $57.00

OTHER PANDUX THERMOMETERS: Stainless Steel Stem Dial Type regular and with maximum-minimum hands; Glass Mercury Immersion Types for production and laboratory.

Order through your dealer or write factory for complete catalog ND-119 Phone GRanite 8-1134

PACIFIC TRANSDUCER CORP. 11836 W. Pico Blvd. Los Angeles 64, Calif.

▲ For more details circle NED-714 L9 on enclosed inquiry slip ▲

Announcing...the latest addition to our family of quality products

MEYERCORD DRI-MARK FILMS

DRI-MARK . . . is Meyercord's newly perfected, custom-processed line of PRESSURE SENSITIVE signs and trade marks developed specifically for the requirements of durable Truck Signs, Window Signs, Nameplates, and Product Markings for indoor and outdoor use on both light and heavy equipment. These startling new films include:

DRI-MARK DECAL ★ DRI-MARK VINYL ★ DRI-MARK OUTDOOR PAPER ★

DRI-MARK MIRRO-CAL ★ DRI-MARK MIRRO-CAL VINYL ★ DRI-MARK CLEAR MYLAR* ★

Chrome-bright mirrorized film (1 mil and 3 mil) — A mirrorized vinyl Mylar* laminate — *A DuPont polyester film (1 mil and 3 mil)

These high tensile strength PRESSURE SENSITIVE films and laminates give the greatest possible latitude and flexibility to the Meyercord line of products, adaptable to all of your sign needs.

DRI-MARK Decals are processed with Meyercord's own exclusive PRESSURE SENSITIVE adhesive—another development of the firm that for 64 years has maintained the world's undisputed leadership in development and production of Decal products.

Meyercord's in-plant Research, Art, Production and Service facilities assure the most careful processing and quality control.

Remember, when it's DRI-MARK it's MEYERCORD!

with MEYERCORD COLORGARD 70

Now . . . all Meyercord DRI-MARK films are protected by COLORGARD 70 . . . Meyercord's exclusive laboratory-developed and perfected clear top coat—the toughest, most durable coat yet produced for the Decal and transferable film industry. Thoroughly tested! Two years in actual use!

Whatever your sign needs, you owe it to yourself to investigate Meyercord's complete line of products. Our factory trained representatives will be glad to assist you in the proper selection of markings for any particular requirement.

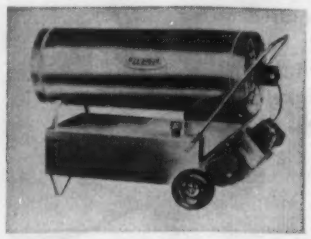
the MEYERCORD co.
Dept. V-316, 5323 West Lake Street, Chicago 44, Illinois

CHECK AND MAIL COUPON
. . . with company letterhead, please

THE MEYERCORD CO.
Dept. V-316, 5323 West Lake Street, Chicago 44, Illinois
We are interested in the following: (please check)
☐ Point-of-Sale signs ☐ Nameplates and product markings
☐ Truck signs and lettering ☐ (others)_____
Name_____
Firm Name_____
Address_____
City_____ Zone____ State_____

▲ For more details circle NED-715 L9 on enclosed inquiry slip ▲

PORTABLE HEATERS hold enough fuel for 18 hr

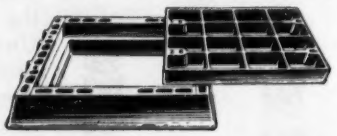


One man can handle the semipneumatic wheel and caster equipped Weather Master portable utility heater which operates on 115 v ac. Automatic ignition turns on fuel, ignites it, and starts the fan. Heaters produce no smoke or fumes. Heat is produced instantly from kerosine or No. 1 or 2 fuel oil burning in a stainless steel combustion chamber. Outside of the heaters is cool. Sizes of 200,000 and 300,000 Btu have 18-hr capacity tanks. Made by **Siebring Mfg. Co.**, Box 527, George, Iowa.

▲ For more details circle NED-716 L9 on enclosed inquiry slip ▲

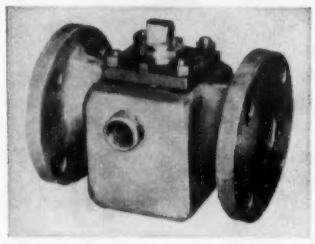
ROADWAY COVER & FRAMES are watertight and gastight

Developed in England, the Elkington-"Gatic" frame and roadway cover features trueness to pattern and is entirely free of distortion. Walkway covers are also available. Frames and covers will not move, wear, or rock, even under heavy, fast-moving traffic. Addition of grease film on contacting surfaces makes units both gastight and watertight. Cover is recessed and frame is hollowed for concrete filling. Cover is opened only with special jack key furnished with the casting. Multiple covers will serve practically any size needs. Manufactured in the United States by **Flockhart Foundry Co.**, 83 Polk St., Newark 5, N. J.



▲ For more details circle NED-717 L9 on enclosed inquiry slip ▲

SLEEVED VALVES integral jacket surrounds body



Tufline sleeved valves are now available in a jacketed construction in standard 150 and 300-psi, two and three-way bottom entry designs. The integral jacket surrounds the body bore and allows heating or cooling media to be introduced. A Teflon sleeve keeps valve tight without readjustment, eliminates need for lubrication, and keeps stream free from contamination. Valves are wrench operated in flanged-end sizes from ½ through 3 in. and gear operated in sizes 3 through 6 in. They can be furnished with stainless, Alloy 20, or carbon steel bodies and plugs, or in aluminum, bronze, Hastelloys, Monel, nickel, and stainless. Made by **Continental Mfg. Co.**, 247 Park Ave., New York 17, N. Y.

▲ For more details circle NED-718 L9 on enclosed inquiry slip ▲

Great Excitement Over the Amazing ALL NEW WAYNE Power Sweeper

Heart of the Filter-Vac Dust Control System. 300% greater filtering area.

. . . Obsoleting all other mechanical sweepers. *Filter-Vac Dust Control*, an exclusive Wayne feature, deposits dust directly into the dirt hopper automatically. With no old-fashioned dust bag to empty, the Wayne sweeps faster . . . cleaner . . . inside or out, at less cost. So before you buy any sweeper, get the facts about the all new Wayne years-ahead exclusive features.

Largest Effective Hopper Capacity • Welded Steel Body • Quick Broom Change • Greater Horsepower • Automotive Foot Controls • Wrap-Around Bumpers • Vacuum Cleaning Attachment • A Size and model for every need—L.P., Gas, Electric.

WAYNE MANUFACTURING CO.
1370 E. Lexington Street
Pomona, California

Send for descriptive literature or ask for a demonstration.

World's largest producer of Power Sweepers for cities and industries.

▲ For more details circle NED-719 L9 on enclosed inquiry slip ▲

WHY TIE UP A $10,000 AUTOMATIC WITH JOBS THE TRAUB CAN DO

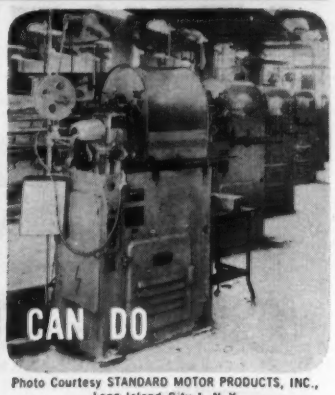


Photo Courtesy STANDARD MOTOR PRODUCTS, INC., Long Island City 1, N. Y.

Standard Motor Products, Inc. and many other industrial leaders realize the economy of reserving their expensive automatics for jobs only they can do . . . and using batteries of low cost TRAUB Automatics for all other jobs.

You, too, can increase your profits by using your high cost automatics for jobs only they can do.

Why tie-up capital? Why jack-up overhead and maintenance? Match the machine to the job. You can make more profit by running low cost TRAUB Automatics for the majority of jobs in your shop.

Capacities up to 2-3/16" diameter.

TRAUB AUTOMATICS as low as $2795.

Illustrated Literature On Request

Guthery Cost-Cutting Machine Tools MACHINE TOOL CORPORATION
38-31 CRESCENT STREET • LONG ISLAND CITY 1, N. Y. • EXeter 2-4090

▲ For more details circle NED-720 L9 on enclosed inquiry slip ▲

ELIMINATE BLINDHOLES WITH... Stat-O-Seal

The unique design of Stat-O-Seals and their exceptional sealing effectiveness enable engineers and designers to save costs in many ways—*eliminating blind holes is one of them.*

Why not find out about the many plus features of Stat-O-Seals for sealing studs, bolts, other fasteners and fittings.

Write for free catalog.

Parker SEAL COMPANY
Culver City, California and Cleveland, Ohio
A DIVISION OF PARKER-HANNIFIN CORPORATION

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FOR COST-CUTTING SPEED AND ACCURACY

All of the precision accessories shown . . . and more, too . . . are immediately available in a wide range of standard sizes or in special sizes to specifications. Complete line of layout plates, floor plates, cast iron and black granite surface plates offered, too. Send for your FREE catalog today.

MACHINE PRODUCTS Corporation
6771 E. McNICHOLS ROAD • DETROIT 12, MICHIGAN

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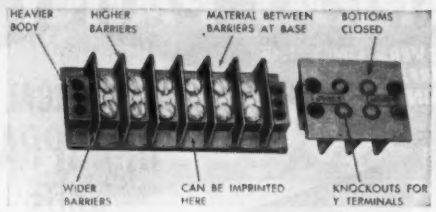
AT LAST—The IDEAL BARRIER TERMINAL STRIP



JONES 500 SERIES
LONGER—STURDIER

Wider and higher barriers for increased creepage distances. Closed bottoms for complete insulation. Material between barriers at the base adds to the strength and maintains the same creepage distance between contact to contact and contact to ground. Can be imprinted here. No insulating or marker strip required. Three series—540, 541 and 542 having the same terminal spacing as our 140, 141 and 142 series.

Complete listing in the new Jones No. 22 catalog. Write for your copy today.

Jones — HOWARD B. JONES DIVISION
CINCH MANUFACTURING COMPANY
CHICAGO 24, ILLINOIS
DIVISION OF UNITED-CARR FASTENER CORP.

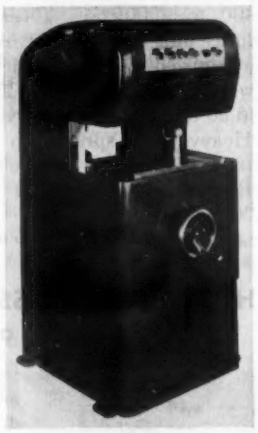
▲ For more details circle NED-723 L9 on enclosed inquiry slip ▲

CAN TYING MACHINE
ties twelve 5-gal cans at once

Up to twelve 5-gal or smaller cans can be tied together for easier storage and shipment with this twine tying machine. Smaller bundles or smaller cans are handled without any adjustments. Cans are stacked on waist-high table and foot pedal is tripped. Revolving arm carrying twine circles the stack three times, maintaining the proper tension to insure a secure wrap. Knotter automatically knots the twine at the end of the third revolution and a knife cuts the twine close to the knot. Operation takes less than 3 sec. A 110-v ac motor drives the caster-mounted machine. Made by **B. H. Bunn Co.**, 7605 Vincennes Ave., Chicago 20, Ill.

▲ For more details circle NED-725 L9 on enclosed inquiry slip ▲

ROLL MARKING MACHINE
for rounds, flats, contoured pieces



Pressure ranges of 6, 12, and 20 tons are offered in the Model HHRMA Automark hydraulic roll marking machine. Pump, motor, oil reservoir, valves, and electric controls are built into the standard machine, suited for marking rounds, flats, and contoured pieces with equal ease. Rolling action of the marking head across the work can be repeated any number of times for greater depth of penetration. Automatic fixtures can be added. Opening between die slide and work table top has a 0 to 14-in. adjustment. Speeds up to 6000 one-inch strokes per hour, or 900 maximum travel strokes are possible. Maximum vertical ram travel is 1 in. and cross slide stroke adjusts from ½ to over 8 in. Made by **Defiance Machine & Tool Co.**, 1920 S. Vandeventer Ave., St. Louis 10, Mo.

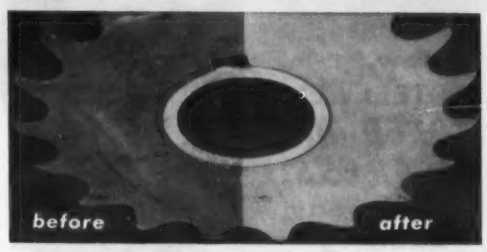
▲ For more details circle NED-726 L9 on enclosed inquiry slip ▲

Flexible Cushion Coupling

Dodge Mfg. Corp.—Expanded line of Para-flex flexible cushion couplings ranging from fractional to 190 hp per 100 rpm is reviewed in 12-page Bulletin A669C. Two new sizes have been added to line. The PX24, largest in line, delivers up to 2000 hp at 1080 rpm. Couplings accommodate angular and parallel misalignment, and end float, singly or in combination.

▲ For more details circle NED-727 L9 on enclosed inquiry slip ▲

For absolute cleanliness, low cost CIRCO ultrasonic degreasers and washers



In case after case, where **absolute** product cleanliness is critical, CIRCO does the job...does it faster...does it cheaper. Choose from standard models to huge custom-designed conveyerized systems, **or** convert your present cleaning equipment merely by adding CIRCO ultrasonic transducers and controls. And, where conventional cleaning is sufficient, CIRCO offers a complete line of degreasing and washing units and degreasing solvents.

CIRCO *Equipment Company*
Specialists in Ultrasonic Energy
51 Terminal Ave., Clark, New Jersey • FUlton 8-8600

▲ For more details circle NED-729 L9 on enclosed inquiry slip ▲

ARMSTRONG
SET-UP *and* HOLD-DOWN TOOLS

ARMSTRONG Set-up and Hold-down Tools reduce setting-up time—keep men and machines producing. Designed for use on planers, drill presses, milling machines, etc., they hold work securely and rigidly, and thereby reduce spoilage and prevent costly accidents.

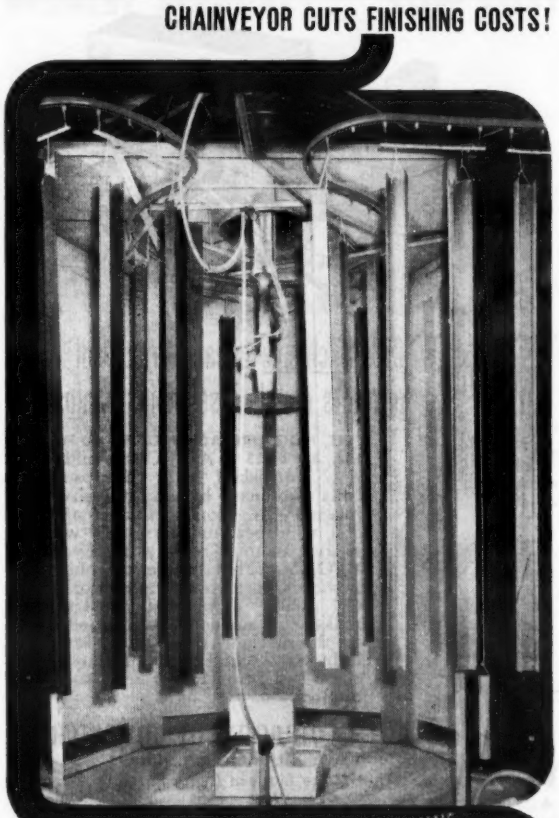
Your local Armstrong Distributor carries ARMSTRONG Set-up and Hold-down tools in stock in sizes for every operation. Stop haphazard setting-up methods. Provide each of your machines with a full complement of ARMSTRONG Set-up and Hold-down Tools.

Write for circular

ARMSTRONG BROS. TOOL CO.
5245 W. ARMSTRONG AVE. • CHICAGO 46, U.S.A.

▲ For more details circle NED-730 L9 on enclosed inquiry slip ▲

CHAINVEYOR CUTS FINISHING COSTS!



This plant installation demonstrates how modern materials handling is effectively applied to new product finishing methods. A Chainveyor overhead system carries lighting fixtures through automatic de-greasing and phosphate coating booths and then into a booth where paint is applied electrostatically. Continuing along the conveyor line the fixtures are then transported to and through the bake oven completing the entire processing cycle without any manual handling. The result is better quality work — done faster and at lower cost!

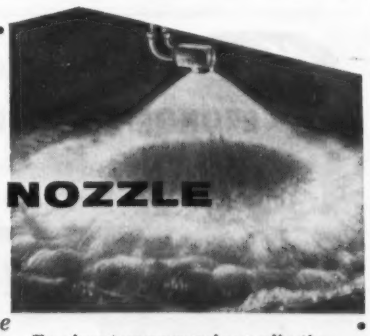
Any business — and almost any plant operation — can benefit from the amazing versatility of Chainveyor when applied to overhead storage, fabricating, assembly, finishing, inspection and handling of loads up to 120 pounds.

For further information about Chainveyor systems, engineered for economical materials handling, write:

QUALITY OVERHEAD CONVEYOR SYSTEMS
CHAINVEYOR CORPORATION
Engineers & Manufacturers
DISTRIBUTORS IN ALL PRINCIPAL CITIES
DISTRICT SALES OFFICES • CHICAGO, DETROIT, JACKSONVILLE, NEWARK, NEW ORLEANS
MAIN OFFICES • 5618 East Washington Blvd. Los Angeles, California

▲ For more details circle NED-724 L9 on enclosed inquiry slip ▲

got a **SPRAY NOZZLE** *problem?*



perhaps one of our **DATA SHEETS** *can suggest a solution*

For almost every spraying application, there's a Spraying Systems Data Sheet that gives useful information on suggested installations and types of nozzles to use. If you have a problem, write and let us know the application involved . . . and we'll send the Data Sheet that applies.

SPRAYING SYSTEMS CO.
3211 RANDOLPH STREET • BELLWOOD, ILLINOIS

And . . . for complete spray nozzle information, write for Catalog 24.

▲ For more details circle NED-728 L9 on enclosed inquiry slip ▲

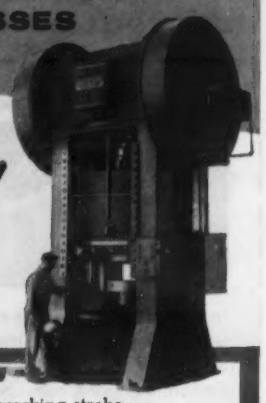
USE THE *Nissen*
BALL POINT WRITING TUBE
make permanent marks on
metal wood plastic glass

This ball point marker saves considerable time in marking, numbering or coding products made of wood, metal, plastic and glass. It is widely used because: **• tube with ball point makes application easy on rough or smooth surfaces • special, fast drying opaque ink withstands heat and weathering • marks will not chip, peel, fade or rub off • 7 different colors are available • 3 different size ball points make fine or broad lines**

Write, wire or call for a trial order
JOHN P. NISSEN, JR. Co., *manufacturers*
GLENSIDE, PENNSYLVANIA • CALL TUrner 4-4664

▲ For more details circle NED-731 L9 on enclosed inquiry slip ▲

80% OPERATING SPEED OVER STANDARD MECHANICAL PRESSES



New STEELWELD *SPEED-DRAW PRESS* has many Exciting Features

1. Far greater speed.
2. Extra power throughout working stroke.
3. Makes over 50% reductions in one draw.
4. Frequently reduces operations required.
5. Permits some operations not possible on a press.
6. Ideal for deep-draw and standard press work.
7. Greater production at lower cost.

Catalog No. 2029 gives the details. Write or phone for your free copy.

STEELWELD MACHINERY DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6601 E. 280th STREET • WICKLIFFE, OHIO

STEELWELD *SPEED-DRAW* PRESSES

▲ For more details circle NED-732 L9 on enclosed inquiry slip ▲

TWO WAYS NEW!

New Paslode Model PR air-power staplers make better stapling fast and easy

Two major stapling tool improvements—air return and high-speed piston—are combined for the first time in the new Paslode Model PR air-power staplers. The result is a stapler that sets new high-performance standards, proved in use.

Jet-drive air return delivers positive high-speed action and extends tool life. Eliminates parts most subject to failure in any stapler. Helps stop costly production line delays.

High speed nylon piston drives staples without recoil. A light touch drives every staple home. The tool does more of the work. Work quality starts high, stays high.

PR staplers take Paslode wide and narrow crown staples in leg lengths from 5/16" to 3/4". Write today for information. Better yet, include a word about your stapling application and let us arrange a free demonstration.

Industrial Distributors—a few excellent territories are still open for the entire Paslode quality line. Your inquiry is invited.

PASLODE COMPANY
Division of Signode Steel Strapping Co.
5860 Northwest Highway, Dept. ED, Chicago 31, Ill.

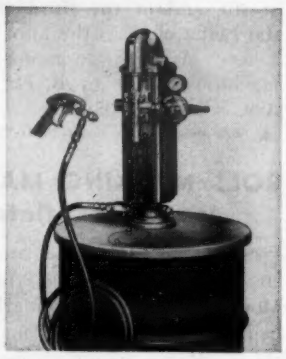
▲ For more details circle NED-733 L9 on enclosed inquiry slip ▲

BRONZE BEARING PILLOWBLOCK in 1/2, 5/8, and 3/4-in. shaft sizes

Consisting of an oil-impregnated Oilite bronze bearing nesting in an aluminum die casting, this Lube-Align pillowblock aligns itself on a rotating shaft through its ball - joint construction. Shaft sizes of 1/2, 5/8, and 3/4 in. are made by **Bronze Bearings, Inc.**, 3832 N. Cicero Ave., Chicago, Ill.

▲ For more details circle NED-734 L9 on enclosed inquiry slip ▲

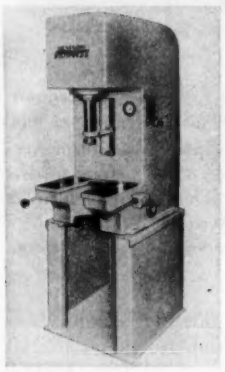
AIRLESS SPRAY PAINTING atomizes by hydraulic pressure



Hydraulic pressure alone atomizes the material in the No-Air Dyna-Spray system. Powered by a Power-Master pump, system produces a well-defined, pulsation-free spray pattern without heating paint at pressures from 400 to 2000 psi. Overspray and bounceback are minimized. Four nozzles with spray angles from 15 to 80 degrees are included. Heavy duty spray gun weighs only 12 oz and has trigger that can be locked open. Made by **Lincoln Engineering Co.**, 4010 Goodfellow Blvd., St. Louis 20, Mo.

▲ For more details circle NED-735 L9 on enclosed inquiry slip ▲

HYDRAULIC PRESSES have manual or automatic controls



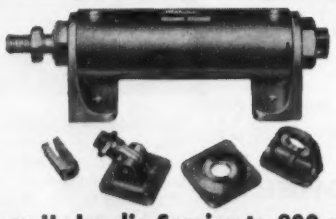
Capacities from 3 to 8 tons are available in Series S hydraulic Multipresses. Self-contained bench type units have a large bed, rigid frame, ample knee room, and an easily accessible and adjustable relief valve for adjustment of ram pressure. A pushbutton gage valve provides quick pressure readings. A quick-adjusting inch and stroke change control is incorporated. Presses are available with high operating speed cylinders, manual or automatic controls, and can accommodate Denison 6 or 12-station indexing tables. Height without bench is 49 1/4 in. and weight is 1300 lb. Made by **American Brake Shoe Co.**, Denison Engineering Div., 1160 Dublin Rd., Columbus 16, Ohio.

▲ For more details circle NED-736 L9 on enclosed inquiry slip ▲

Modernair

ECONOMAIR CYLINDERS

Tops in Quality, Economy, Compactness!



For Air or Hydraulic Service to 200 psi

★ Compact—feed ring head design eliminates bulky end castings!
★ Interchangeable mountings—flange, clevis, L-type
★ "O" ring seals throughout
★ Available in 1 1/8", 1 1/2", 2", 3" and 4" bore sizes, any practical stroke length, cushion or non cushion types

Economair series cylinders offer today's best buy in quality cylinders at truly competitive prices—why pay more and get less? Write today for complete specifications, prices.

Modernair CORPORATION
Dept. F11 400 PREDA ST., SAN LEANDRO, CALIF.
5007 Brookpark Rd., Cleveland 34, Ohio

▲ For more details circle NED-737 L9 on enclosed inquiry slip ▲

ECONOMICAL SPRAY PAINT

COVERS ONLY THE SURFACE TO BE PAINTED

TROPICAL DRI-SPRAY WHITE

Overspray dries as it falls ... dusts, brushes, sweeps away!

Get all the time and labor saving advantages of spray painting—with no disadvantages. No need for drop cloths or other protection for floors, desks, or machines when painting inside. Overspray dries as it falls and is dusted or swept away.

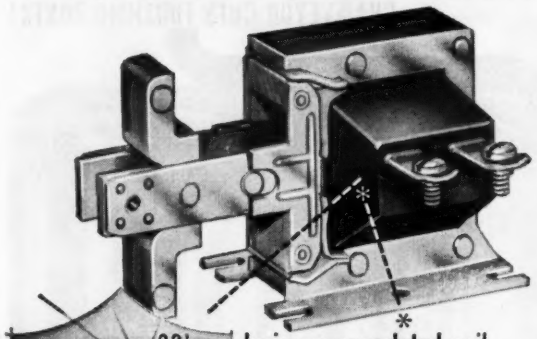
Tropical DRI-SPRAY WHITE is a product of the combined research facilities of Parker Rust Proof and Tropical Paint. It beautifies and gives heavy-duty protection to wood, metal, concrete or plaster surfaces indoors. Learn how you can save with Tropical DRI-SPRAY WHITE. Write for free information today!

PARKER RUST PROOF PRODUCTS

HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883

TROPICAL PAINT COMPANY
1124-1236 W. 70th, Cleveland 2, Ohio
SUBSIDIARY OF PARKER RUST PROOF COMPANY

▲ For more details circle NED-738 L9 on enclosed inquiry slip ▲



Moisture Impurities Fire

CC's exclusive encapsulated coil protects double T solenoids against...

FIRE, MOISTURE, ACIDS, OILS AND HARMFUL ALKALIES — All CC solenoids are now furnished with encapsulated coils produced by an exclusive CC process — a process that coats all coil windings and terminals with a heavy, shock-resistant layer of EPOXY. This protection plus the inherent performance superiority of CC double T plunger construction makes this solenoid the most efficient on the market. Write today for Bulletin SL-23 and find out how four sizes satisfy virtually any solenoid application.

CONTROLS COMPANY OF AMERICA
9577 Soreng Ave., Schiller Park, Illinois
Controls That Make Modern Living Possible

▲ For more details circle NED-739 L9 on enclosed inquiry slip ▲

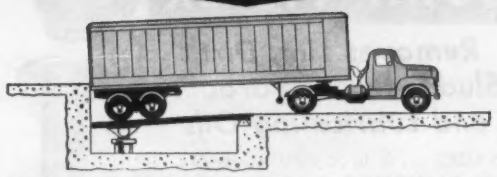
Power Springs

A.S.C. Divisions are unusually well equipped for the manufacture of flat spiral and motor springs. Made from our own cold-rolled specialty steels or other suitable metal, they can be furnished in sizes and methods of end attachment to meet your requirements. Write for handy pamphlet "Spring Design and Selection—in brief."

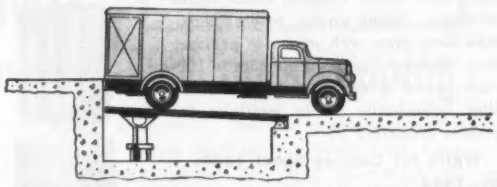
Associated Spring Corporation
General Offices
Bristol, Connecticut

▲ For more details circle NED-740 L9 on enclosed inquiry slip ▲

Rotary TRUCK LEVELER
saves dock space • speeds loading



High truck beds are lowered to dock level



Low truck beds are raised to dock level

The Rotary Truck Leveler, using economical hydraulic power, handles any highway carrier at any dock. Easily installed at new or existing buildings. Write for catalog RE-800.

ROTARY LIFT CO., 1067 Kentucky, Memphis 2, Tennessee

▲ For more details circle NED-741 L9 on enclosed inquiry slip ▲

HIGHEST ACCURACY . . . LOW COST

MERCURY PRESSURE GAUGES

For any low-pressure air or gas application, Meriam Mercury Pressure Gauges provide *permanent* accuracy and economy.

Recalibration or checking is never required. No gears, diaphragms, springs, levers or pivots are involved. Mercury pressure gauges are always accurate.

Direct reading in ounces, pounds or inches of water...ranges are available to eight pounds or equivalent. Special features provide overrange protection.

WRITE FOR BULLETIN P-10

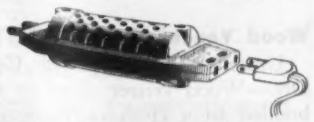
THE MERIAM INSTRUMENT CO.
10920 Madison Avenue
Cleveland 2, Ohio

Pressure and Vacuum Gauges, Liquid Level Gauges and Flowmeters

▲ For more details circle NED-742 L9 on enclosed inquiry slip ▲

SOLDERING GUN ACCESSORY
reduces temperature to 500-600° F

Correct temperature for soldering printed circuits and laminated wiring boards is achieved through the use of the Gunchoke, a device which reduces soldering gun tip temperatures to 500 or 600° F. Models adaptable to most soldering guns are available. Gun is plugged into the Gunchoke which plugs into a standard electric outlet. Two adjustments permit reducing temperature to 500 or 600° F. Made by **Electric Soldering Iron Co.**, W. Elm Street, Deep River, Conn.



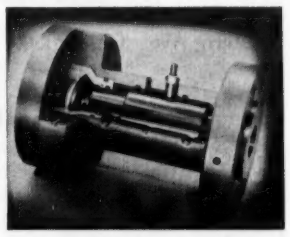
▲ For more details circle NED-744 L9 on enclosed inquiry slip ▲

BATTERY CHARGE CONTROL
insures fully-charged truck battery

The MP-3 Exide Charge Control automatically controls battery charging equipment as it brings the battery to a state of full charge, then automatically terminates the charge. Unit insures fully charged batteries and eliminates the danger of overcharging. It will control both regular daily charges and weekly equalizing charges, and requires no attendance. When battery reaches 2.37 v per cell at 77° F, a TVR temperature-compensated voltage relay mounted inside the case operates to reduce charge rate and/or start electric timer. Controls for charging 6 to 60-cell batteries are available. Made by **Electric Storage Battery Co.**, Exide Industrial Div., Rising Sun & Adams Avenues, Philadelphia 20, Pa.

▲ For more details circle NED-745 L9 on enclosed inquiry slip ▲

HIGH SPEED VALVE
½ to 36-in. hydraulic type



Electric, electronic, hydraulic, or pneumatic controls can be used to actuate the Bendix high speed hydraulic valve which can be opened or closed within 0.003 sec. Tubular in shape, its diameter is no larger than the pipeline or piston on which it is mounted. Mouth diameters from ¼ to 36 in. or more are offered. Pressure ratings range from 200 psi at 250° F to 8000 psi at 200° F. Service range is −65 to 400° F and from 25 to 12,000 psi. Valve is equipped with a visual position indicator and can be adapted for remote electrical indication. Design provides bubble-tight shut-off from 0 psi to maximum operating pressures. Made by **Bendix Aviation Corp.**, Bendix-Pacific Div., 11600 Sherman Way, North Hollywood, Calif.

▲ For more details circle NED-746 L9 on enclosed inquiry slip ▲

THESE MUELLER BRASS CO. ENGINEERING MANUALS help you select the best materials and best methods of fabricating a product

Mueller Brass Co. engineers have carefully selected and compiled the data contained in these technical manuals. Send for any or all of the free manuals that interest you; check appropriate box, clip out and mail with your return address.

- ☐ FORGINGS
- ☐ 600 SERIES BEARING ALLOYS
- ☐ COPPER BASE ALLOYS IN ROD FORM
- ☐ SCREW MACHINE PRODUCTS
- ☐ TUF-STUF ALUMINUM BRONZE
- ☐ COLD-PREST IMPACT EXTRUSIONS
- ☐ SINTEEL POWDER METAL PARTS
- ☐ FORMED COPPER TUBING

MUELLER BRASS CO. PORT HURON 37, MICHIGAN

▲ For more details circle NED-747 L9 on enclosed inquiry slip ▲

LIMIT SWITCHES WITH 1½" OUNCES SENSITIVITY... IMMUNE TO VIBRATION

180° Adjustable Pre-travel

National Acme Super-Sensitive Limit Switches provide the highest possible degree of control reliability. Extremely compact, they are sensitive to forces as low as 1½" ounces*, yet have machine tool ruggedness to withstand vibration. Reliable, accurate service is assured throughout millions of contacts.

For extreme operating flexibility, a simple cam adjustment lets you set 90° pre-travel anywhere within a 180° arc. The steel trip rod, available in lengths to 10", is readily lengthened or shortened by a simple set screw adjustment; can be bent or welded for easy hook-up to other linkages. Correct contact pressure is easily set by a steel spring adjustment insuring split-second contacts, ten times normal switch life. Micro switch unit is fully enclosed for lasting protection against dirt and moisture.

Select from a complete line of National Acme Limit Switches for any control application. Write for Limit Switch Bulletins containing detailed information stating your requirements. *at 10°

National Acme
THE NATIONAL ACME COMPANY
182 E. 131st STREET
CLEVELAND 8, OHIO

Sales Offices: Newark 2, N. J.; Chicago 6, Ill.; Detroit 27, Mich.

▲ For more details circle NED-748 L9 on enclosed inquiry slip ▲

Write for Free Facts on....

Brainard's NEW "POWER TEAM" FOR HEAVY-DUTY STRAPPING!

• Heavy duty strapping users get more cost-cutting advantages with Brainard's new PNB stretcher and PNB2 sealer.

The PNB pneumatic stretcher permits quick tensioning—and maintains it. The PNB2 sealer, with a simple press of the thumb, gives a strong, safe, lasting seal.

Applied to 2" x .050 strap, they cut loading and packaging costs.

Write for free facts—or call your Brainard representative—he'll be there.

DIVISION OF SHARON STEEL CORPORATION • WARREN, OHIO

BRAINARD Safe-Ty STRAPPING

In Canada: Brainard Steel, Canadian Division, Toronto, Montreal

MAKERS OF TENSIONAL, HEAVY DUTY STRAPPING, SEALS, ACCESSORIES, TOOLS FOR CARLOADING AND PACKING

▲ For more details circle NED-743 L9 on enclosed inquiry slip ▲

BUILT-IN PATCH Gives 100% MORE Apron Life!

142 DC APRON 42" LONG

The patch on this AO Protectocote Neoprene Apron pays for itself many times over. Gives double the apron life! Another feature is the adjustable snap fastener at neck — apron unsnaps if caught in a machine. Aprons are yellow; regular or split leg. Available in several lengths. AO Protectocote provides easy-to-clean, lightweight, flexible protection against abrasion, chemicals, oil and grease.

American Optical Company
SAFETY PRODUCTS DIVISION

Always insist on Trademarked Safety Products

Safety Service Centers in Principal Cities

▲ For more details circle **NED-749 L9** on enclosed inquiry slip ▲

The truck with "boarding house reach"
INCREASES WAREHOUSE CAPACITY *as much as 50%*

RAYMOND

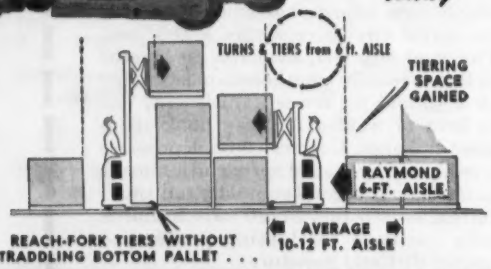
Reach-Fork

ELECTRIC TIERING TRUCK

2000 or 3000 lb. capacities

Why build or lease additional storage when there's space to be had right in your present warehouse? The RAYMOND Reach-Fork eliminates wasteful 10 to 12-ft. aisles . . . permits you to tier in space-saving aisles as narrow as 6 ft. No special racks or pallets required because it operates from the aisle, without straddling bottom pallet. Forks extend to pick up or deposit your load . . . retract in seconds. Ideal for loading or unloading. Stacks pallets closely on racks, in truck trailers, boxcars, bulk storage areas. Safe on elevators and low-capacity floors.

Mail coupon today



The RAYMOND CORPORATION
4132 Madison St., Greene, N.Y.

Please send Bulletin on Raymond Reach-Fork. I am interested in:
☐ 2,000 lb. cap. Reach-Fork
☐ 3,000 lb. cap. Reach-Fork.
☐ Have a representative call.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

▲ For more details circle **NED-750 L9** on enclosed inquiry slip ▲

New Literature and Catalogs

Wood Veneer Covering

United States Plywood Corp., Flexible Materials Div.—Wood veneer sliced to a 1/85-in. thickness and bonded to a cloth or nonwoven fiber backing under heat and pressure can be laminated to steel, aluminum, plastic, and Fiberglas. Industrial Flexwood will bend once laminated to steel or aluminum, and can be formed. Its properties and applications are detailed in an 8-page brochure.

▲ For more details circle **NED-751 L9** on enclosed inquiry slip ▲

Weighing Systems

A. H. Emery Co.—The basic art of weighing, accuracy in weighing systems, Emery "rolling ball" head, and instrumentation used with modern weighing systems are subjects of four folders dealing with industrial weighing. They contain basic data and are suited for collecting competitive data.

▲ For more details circle **NED-752 L9** on enclosed inquiry slip ▲

High Capacity Pipeline Meter

Rockwell Mfg. Co., Meter & Valve Div.—Capacity of the Turbo-Meter is 15,000 barrels of liquid per hour when installed in petroleum pipelines. It features sustained accuracy, regardless of the viscosity of the product being measured. Meter is detailed in 12-page illustrated Bulletin OG-417.

▲ For more details circle **NED-753 L9** on enclosed inquiry slip ▲

Transistors & Their Applications

"Understanding Transistors" is title of a 64-page handbook which begins with a discussion of germanium properties and basic theory to provide a solid foundation for succeeding chapters. Various types of transistors and their applications are covered in detail. Over 50 diagrams and illustrations are included. Available for 50 cents from Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.

▲ For more details circle **NED-754 L9** on enclosed inquiry slip ▲

Boring, Facing & Threading Tools

Comet Tool Co.—Seventeen different sizes for holes from 1/16 in. up are offered in line of tools for boring, facing, and internal threading. Described in 6-page illustrated folder are the one and two-piece tools, carbide insert tools, and jig boring sets.

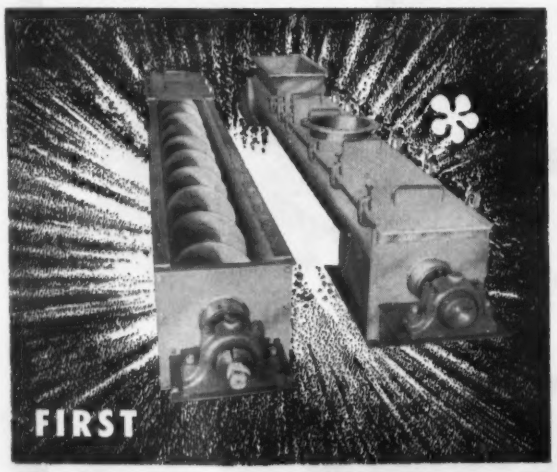
▲ For more details circle **NED-755 L9** on enclosed inquiry slip ▲

Precision Ground Steels

Peninsular Steel Co.—Latest information on oil-hardening, air-hardening, and low carbon, precision ground tool steels is furnished in 16-page price and stock list. Tools are described, along with proper uses of each item and heat treat characteristics. Over 1000 sizes are listed.

▲ For more details circle **NED-756 L9** on enclosed inquiry slip ▲

See your CONTINENTAL Distributor



FIRST FOR *Screw Conveyors*

Continental's wide experience in manufacturing special and standard screw conveyors and screw elevators is available to assist in your planning.

Custom Made Stainless Steel Screw Conveyor.

CGC
INDUSTRIAL DIVISION
Continental Gin Company
BIRMINGHAM, ALABAMA
ATLANTA • DALLAS • KNOXVILLE • MEMPHIS • MOBILE • NEW YORK 17

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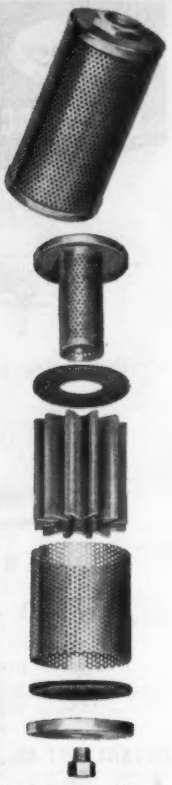
New GENERAL SUMP FILTER



Removes Lint, Dirt, Sludge from Hydraulic and Lubricating Oils

5 SIZES . . . 8 to 50 GPM! Meets J.I.C. Standards—3000 Series General Filters have a heavy-duty, compression sealed, perforated metal housing which resists corrosion, cleans easily, assures maximum flow rates with minimum pressure drop. Standard pleated element is 100-mesh monel — others optional. Install filter individually or in *multiples* for greater capacity.

WRITE for Catalog Sheet 1369.
GF—1394

GENERAL FILTERS, INC.
43800 Grand River Avenue
Novi, Michigan
IN CANADA: Canadian General Filters, Ltd., 39 Crockford Blvd., Scarborough, Ontario

▲ For more details circle **NED-758 L9** on enclosed inquiry slip ▲

Short Run Stampings CUT COSTS 9 WAYS

New FREE Federal Catalog #301 lists 9 areas of product development and production where money can be saved by Short Run Stampings. Also gives many design tips to reduce stamping costs. *Write for your FREE copy today!*

QUALITY STAMPINGS
FEDERAL
IN SMALL QUANTITIES

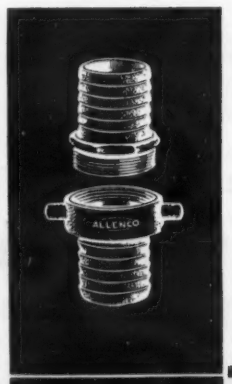
3 PLANT LOCATIONS

FEDERAL TOOL & MFG. CO.
3618 Alabama Ave., Mpls. 16, Minn.

FEDERAL SHORT RUN STAMPING, INC.
918 Lyell Avenue, Rochester 6, N. Y.

FEDERAL STAMPING COMPANY
7318 Atoll Ave., No. Hollywood, Calif.

▲ For more details circle **NED-759 L9** on enclosed inquiry slip ▲



HEAVY-DUTY COUPLINGS

Suction hose? Use Allenco malleable iron couplings with swivels, plated or brass. Steam hose? Use Allenco cast brass couplings with extra heavy semi-finished swivels. Water hose? Use Allenco heavy cast brass coupling with lug or hex.

quality Allenco couplings and clamps for every need!

SURE-GRIP CLAMPS

Steel or brass band type can be tightened with one hand — top of clamp is formed to keep nut from turning. Holds hose evenly all around; wide selection of sizes. Double steel wire clamp, with attachment tool, also available in wide selection of sizes.

W. D. ALLEN Manufacturing Co.
650 South 25th Avenue
Bellwood, Illinois

ALLENCO . . . quality products since 1887

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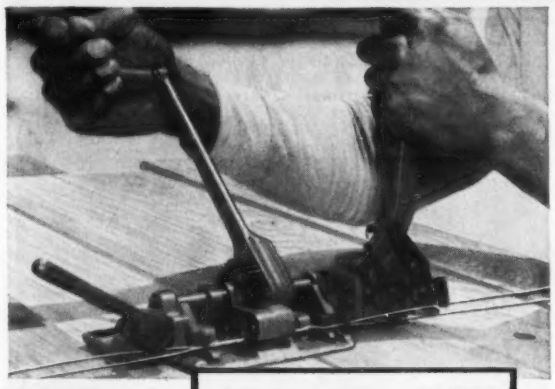


NOW! Save 50-80% on strapping

Twice as much for the money . . . Oval steel strapping gives you high tensile strength . . . a greater lineal feet per pound yield. Countless users have cut their strapping costs 50 to 80%. *Easier to use.* Just *one* tool to tension, twist and cut the strapping. You save time, manpower and equipment investment. *Full details.* Circle the reader service card, or write:

A.J. GERRARD & COMPANY / STRAPPING MATERIALS

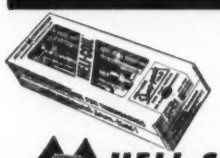
1954 Hawthorne Blvd. • MELROSE PARK, ILLINOIS

▲ For more details circle NED-761 L9 on enclosed inquiry slip ▲

How to restore damaged threads to size better than new . . . in minutes

with HELI-COIL® Screw Thread Inserts

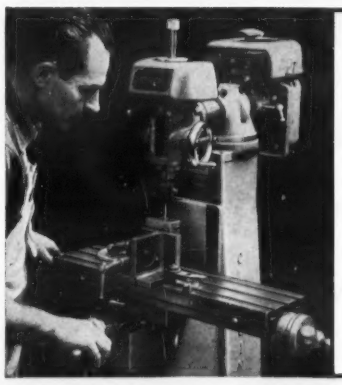
Save expensive parts, downtime, costs. Get the effective and economical *Heli-Coil* SHOP-PACK Thread Repair Kit. In just *minutes* you can install new stainless steel threads that permanently resist wear, corrosion, galling, seizing and stripping in *any* material. Permits you to use original size screw.



SHOP-PACK Thread Repair Kits are available in all standard thread series and sizes including pipe threads and MM sizes for spark plug holes, from your industrial distributor, or write us today for free literature.

HELI-COIL CORPORATION
3411 Shelter Rock Lane, Danbury, Connecticut

▲ For more details circle NED-762 L9 on enclosed inquiry slip ▲



VERIFIED ACCURACY — Before it leaves the factory each CLAUSING Mill must pass rigid tolerance tests such as:

1. Top of table perpendicular to column ways within .0005" in 6" travel.
2. T-slots square with cross slide dovetails within .0005".
3. Table parallel to turret within .001".
4. Spindle square with table, front to rear, within .001" T.I.R. in 5" circle.
5. Spindle taper (internal) run out within .0002" at spindle nose.
6. Table T-slots parallel to table dovetail ways within .0005" in 8" longitudinal travel.

HERE'S PROOF OF PERFORMANCE . . .

"The Clausing Vertical Miller is the best machine for the money on the market today! It is most versatile . . . and extremely accurate."
— *F. L. Ballentine,*
EMPIRE TOOL ENGINEERING COMPANY, INC.

This report is typical of the experience of users everywhere. The CLAUSING VERTICAL MILLER is a precision machine tool designed for operations where "extremely accurate" machining is required. And, it is an outstanding producer, "most versatile, easiest to set up, get around and operate of any miller at or near its low price." Only $875 f.o.b. factory. Write FOR FREE LITERATURE.

MILLS, DRILLS, BORES, REAMS, SHAPES AT ALL ANGLES...WITH ONE WORK SET-UP!

CLAUSING DIVISION • ATLAS PRESS COMPANY
11-113 N. PITCHER ST., KALAMAZOO, MICHIGAN

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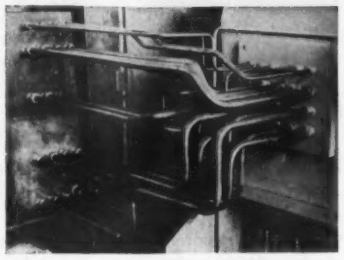
New Processes and Materials

HYDRAULIC LINE TUBING made in 1/4 to 1 1/4-in. diameters



JIC - approved cold drawn welded hydraulic fluid line tubing bends and flares easily and uniformly. Every length is hydrostatically tested. Tubing is available in sizes from 1/4 to 1 1/4 in., with wall thicknesses from 13 to 20 gage. It is supplied with a coating of oil on both surfaces for corrosion protection, and both ends are corked to keep out foreign matter. Available from **Joseph T. Ryerson & Son, Inc.**, Box 8000-A, Chicago 80, Ill.

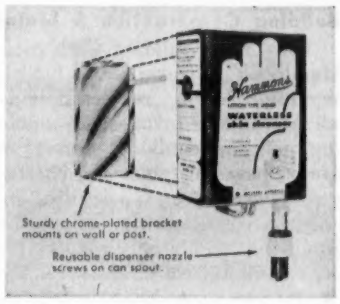
▲ For more details circle NED-764 L9 on enclosed inquiry slip ▲

HIGH TEMPERATURE LUBRICANT for oven conveyors, gears, bearings

Typical uses for dag 207 high temperature lubricant are on oven conveyors, kiln cars, gears and bearings, and glass machinery. Formulation consists of a concentrated dispersion of colloidal molybdenum disulfide in an LB Series Ucon lubricant. It resists settling and lubricates at heats above the point where most petroleum oils carbonate. Trial sample can be obtained by writing **Acheson Colloids Co.**, 1635 Washington St., Port Huron, Mich.

▲ For more details circle NED-765 L9 on enclosed inquiry slip ▲

SKIN CLEANSER offered in 1-gal dispenser



Jobs requiring frequent hand washing can be serviced by this 1-gal size disposable dispenser for Hammons liquid waterless skin cleanser. Enamel-lined can has inverted direction panel for easy reading when installed. A reusable dispensing nozzle fits on the plastic spout of the container which is mounted by a clamp on wall or post. Cleanser contains hexachlorophene, glycerin, lanolin, and other ingredients which quickly remove various soils. Made by **Hammons Products, Inc.**, 1141 Wildwood Ave., Ft. Wayne 6, Ind.

▲ For more details circle NED-766 L9 on enclosed inquiry slip ▲

MACHINES TO MARK ANYTHING YOU MAKE

The ACROMARK Company
7-11 Morrell St., Elizabeth 4, N. J.

▲ For more details circle NED-767 L9 on enclosed inquiry slip ▲

The new cutter line features a high helix angle, double back-off, and a right-hand spiral to produce more and smoother cuts between grinds, and a free-cutting, stronger tool.

Specially designed and precision-manufactured for die sinking and production milling, the new line is designed to include flats on the shanks for set screw type drivers on all of the end and side milling cutters. Write today for complete information to the Tomkins-Johnson Company, Jackson, Mich.

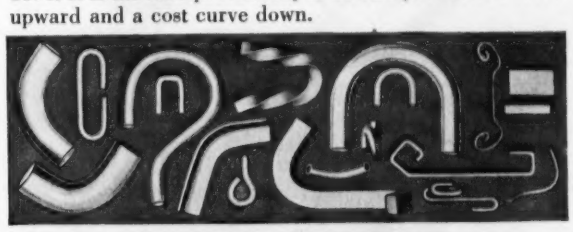
Ask for completely new cutter catalogue No. 259.

T-J TOMKINS-JOHNSON

▲ For more details circle NED-768 L9 on enclosed inquiry slip ▲

WALLACE BENDS

give tubing, pipe, structural shapes and solids the contour you need for the use intended. That is why production men have been bringing bending problems to Wallace since 1896. It is the time-proved way to bend a production curve upward and a cost curve down.



WALLACE BENDERS

serve outstanding metal fabricators the world over, many of them exclusively. The complete Wallace line includes ram benders, rotary and roll benders, automatic and manually operated, in the widest range available. For the job you do, Wallace builds exactly the bender you need.

FROM YOUR DESK OR SHOP, ANYWHERE

CALL WALLACE COLLECT

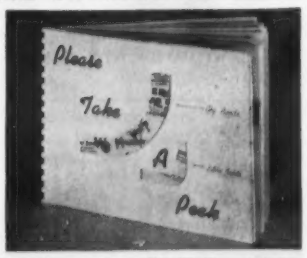
BUckingham 1-7000, Chicago

Ask for Bob Baxter. It's the quick, direct way to expert help on a bending problem. No charge to you. Wallace pays. Call Bob Baxter now.

SEE BENDING AS OTHERS DO IT

Pictures of actual bending operations abound in the Wallace "Take A Peek" Book. It's free. Get your copy.

Phone or Write
Bob Baxter



WALLACE SUPPLIES MFG. CO.
1312 W. Wolfram Street • Chicago 13, Illinois

▲ For more details circle NED-769 L9 on enclosed inquiry slip ▲

THE KEY TO SAVINGS

in cost of construction of process industry heat exchangers

This booklet describes B&W's new line of carbon steel Lectrosonic Heat Exchanger Tubes, which offer cost savings of 10 to 32% over equivalent seamless steel tubing. It demonstrates how quality controlled manufacturing methods assure good fit in tube sheets, ease of fabrication, and optimum fluid flow in any type of heat exchanger. For full information write for B&W Bulletin 431. The Babcock & Wilcox, Tubular Products Division, Beaver Falls, Pa. TA-9022-WPL1

B&W THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION

Seamless and welded tubular products, solid extrusions, seamless welding fittings and forged steel flanges—in carbon, alloy and stainless steels and special metals.

▲ For more details circle NED-770 L9 on enclosed inquiry slip ▲

THE SWING IS TO "Dixylon!"

Revolutionary, All-Synthetic Belting Is Proving Superiority In Application After Application

Dixylon has established new concepts in belting performance, value, versatility . . . the swing is to Dixylon for heavy and light power transmission, for high speed, machine tool drives, printing tapes, spinning tapes, conveying belts, numerous other uses. Check these advantages . . .

*Stretch-free—runs for years without idlers or take-up.

*High Tensile Strength—very thin Dixylon belting can be used at amazingly high speeds, and for small pulley diameters.

*Great Durability—gives long, maintenance-free service life.

*Non-Slip—high frictional coefficient . . . no belt dressing required.

*High Resistance to oils, greases, most acids. Non-absorbent.

A Special Dixylon Plus Value . . . Can Be Made Endless In Minutes Without Lacing Or Sewing—

The speed and ease with which Dixylon can be joined saves downtime, reduces need for carrying large stocks of endless belting.

R. & J. Dick COMPANY, inc.
Leaders in the Development and Manufacture of Power Transmission and Conveying Equipment
TOTOWA, NEW JERSEY • CLifford 6-6400
CHICAGO • LOS ANGELES • SAN FRANCISCO • SEATTLE • PORTLAND

SEND COUPON FOR CATALOG

R. & J. DICK COMPANY, Inc.
Dept. 11K Totowa, New Jersey
Please send a free copy of your catalog, "Dixylon—A Modern Synthetic Belting."
NAME
COMPANY
ADDRESS
CITY ZONE STATE

▲ For more details circle NED-771 L9 on enclosed inquiry slip ▲

New Literature & Catalogs

Panel Meters & Pyrometers

Assembly Products, Inc.—Indicating panel meters and pyrometers described in 12-page Bulletin 107 are available in numerous sensitivities, styles and sizes for monitoring any electrically measurable variable. Bulletin lists specifications of API meters along with prices and mounting dimensions. It also covers transformers, thermocouples, and shunts for use with API meters.

▲ For more details circle NED-772 L9 on enclosed inquiry slip ▲

Mechanical Gap Presses

Oliver Corp., A. B. Farquhar Div.—Series 1000 and 2000 mechanical gap presses illustrated and specified in 12-page Bulletin M-1000 are available in 75, 110, 150, and 200-ton capacities. The 1000 Series is equipped with air-operated friction clutch mounted on back shaft, whereas the 2000 Series has the clutch mounted on the crankshaft. Specs for these OBI presses are included.

▲ For more details circle NED-773 L9 on enclosed inquiry slip ▲

Drill Template Tooling

Techno-Products Corp.—Catalog 103 is a 12-page guide to the use of drill bushings and work locators for template tooling. Described is the Flar-A-Lock line of drill bushings and work locators. Bushings are available for use in metal, plastic, and Masonite tooling templates, and lock in place with simple flaring operation.

▲ For more details circle NED-774 L9 on enclosed inquiry slip ▲

Luminous Ceilings

Luminous Ceilings Inc.—Ten different types of continuous luminous ceilings for providing even glare-free light are described in 8-page bulletin. Construction of various types is shown and typical installations are pictured. Also described are correlated lighting fixtures for commercial and industrial use.

▲ For more details circle NED-775 L9 on enclosed inquiry slip ▲

Building Construction & Maintenance

The "1959 Building Construction and Maintenance Handbook" is composed of 128 pages of data, engineering information, and descriptions of products to help solve problems involved in waterproofing, damp-proofing, painting, caulking, roofing, and flooring. Included are 36 pages of tables and charts, materials, estimating guide, weights and measures, and other aids. Available only by writing on letterhead to L. Sonneborn Sons, Inc., Building Products Div., 404 Fourth Ave., New York 16, N. Y.

▲ For more details circle NED-776 L9 on enclosed inquiry slip ▲

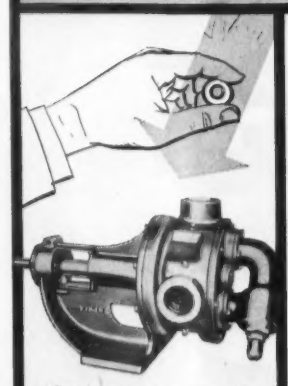
Electrical & Lubricating Devices

Trico Fuse Mfg. Co.—Automatic and chain oilers, mist coolant and lubricating systems, industrial fuses, and fuse accessories are subjects covered by 12-page condensed Catalog 59. Full selection and application data are included.

▲ For more details circle NED-777 L9 on enclosed inquiry slip ▲

A New Concept in Pumping *Abrasive Liquids!

VIKING PUMPS WITH CERAMIC BEARINGS AND MECHANICAL SEALS



After years of experimenting and testing, Viking has developed this new pump that assures you double to triple life, while pumping paints, inks and other *abrasive liquids. Among its features are special ceramic bearings and mechanical seals. Designed for heavy duty, these pumps handle liquids from a minimum viscosity of 100 S.S.U. to heaviest viscous types.

G.P.M. SIZES 3 - 6 - 12 - 16 - 25 - 40

When writing for information, please give:

- Liquid to be pumped
- Viscosity of liquid (S.S.U.)
- Percentage and type of solids present in liquid
- Temperature of liquid
- Specific gravity
- Capacity of pump
- Suction lift or head
- Discharge pressure

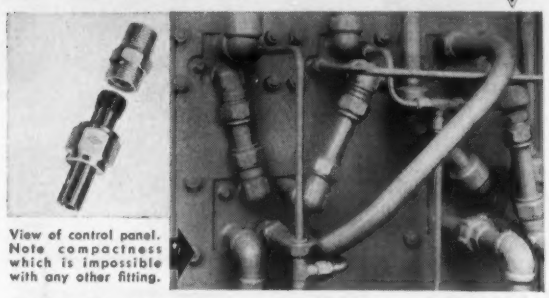
And ask for bulletin SP-507G

*Consult factory for recommendations for pumping abrasive liquids other than paints and inks.

VIKING PUMP COMPANY
Cedar Falls, Iowa, U. S. A. In Canada, it's "ROTO-KING" Pumps
See Our Catalog in Sweet's Plant Engineer's File

▲ For more details circle NED-778 L9 on enclosed inquiry slip ▲

IMPERIAL Engineering and Data Digest
ENGINEERED TUBE FITTINGS — VALVES — TUBING TOOLS



View of control panel. Note compactness which is impossible with any other fitting.

Why should YOU use Hi-Seal tube fittings?

- cuts space requirements up to 50%
- reduces number of bends required
- cuts manhours and installation time
- substantially reduces the amount of tubing needed
- permits the use of straight lengths of .028" copper tubing in bending temper instead of .032" soft tubing in coils
- eliminates need for straightening
- conforms to J.I.C. and A.S.M.E. standards
- available in steel, stainless steel and brass

Write for Bulletin No. 3061

IMPERIAL THE IMPERIAL BRASS MFG. CO.
Dept. Ned-119
6300 W. Howard St., Chicago 48, Ill.
In Canada: 18 Hook Ave., Toronto, Ont.

▲ For more details circle NED-779 L9 on enclosed inquiry slip ▲

NEW! PROMACUT multi-purpose cut-off saw

CUTS without CLAMPING or COOLANT

Cuts carbon, stainless and alloy steels in seconds

Just place stock on table; Promacut whizzes through 2" x 2" x ½" mild steel angle in only 1 second; 6/10 second for ¾" round. Smooth, almost burr-free cuts with comparable speed in many shapes and sizes: up to 12" channel, 6" I-Beams, 4" angles. Does any job you're now doing with hacksaw, bandsaw, cut-off machine of equal capacity.

WRITE FOR DETAILS—Ask for Mobile Demonstration in Your Plant

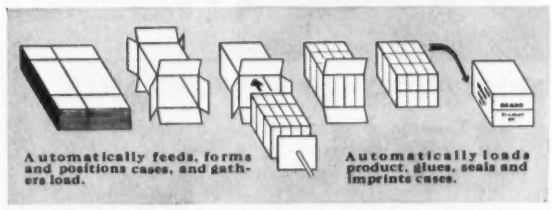
PMI PRODUCTION MACHINERY, INC.
P. O. Box 322, Dept. B
Oakton Station, Des Plaines, Illinois
BALTIMORE • CHICAGO
LOS ANGELES • HOUSTON

DEALERS: Some territories still open — write on letterhead

▲ For more details circle NED-780 L9 on enclosed inquiry slip ▲

Take the HANDS out of PRODUCT HANDLING

Let Packomatic equipment do any or all your casing operations AUTOMATICALLY



Automatically feeds, forms and positions cases, and gathers load.

Automatically loads product, glues, seals and imprints cases.

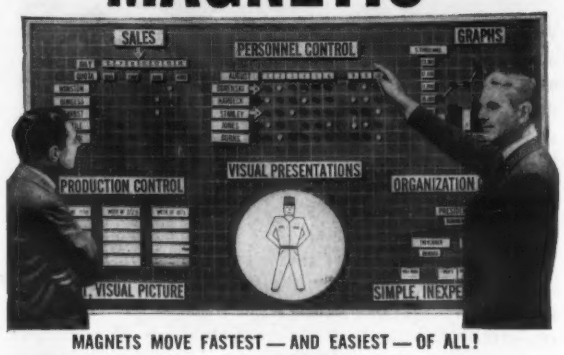
FOR CASING ROUND, SQUARE, RECTANGULAR OR FREE-FORM PACKAGES OF VIRTUALLY ANY SIZE. If you employ even one person per shift to hand-form cases, or to hand-pack, hand-seal, or hand-imprint them, then it can pay you to install Packomatic equipment. Write, phone or wire for facts on how to reduce your casing costs.

See our revolutionary OMNIMATIC-ROTOPRESS. Booth #823-Nov.-PMMI SHOW-New York Coliseum.

J. L. FERGUSON COMPANY
Box 1226, Phone 6-6275, Joliet 12, Illinois

▲ For more details circle NED-781 L9 on enclosed inquiry slip ▲

VISUAL **MAGNETIC** CONTROL



MAGNETS MOVE FASTEST — AND EASIEST — OF ALL!

SIMPLEST VISUAL SYSTEM FOR
- Production
- Personnel
- Sales
- Maintenance
- Scheduling
- Machine Loading
- Charts—Graphs
- Visual Presentations

COLORFUL MAGNETIC ELEMENTS
- show facts instantly
- organize for action
- eliminate mistakes
- get the job done

PRICED FROM $38 INCLUDING MAGNETIC ELEMENTS

PRICE LIST & BROCHURE NE11 FREE ON REQUEST

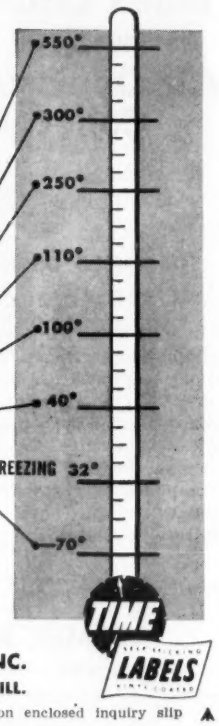
REPRESENTATION DESIRED IN SOME AREAS

Methods Research Corp.
442 Mosel Avenue, Staten Island 4, New York

▲ For more details circle NED-782 L9 on enclosed inquiry slip ▲

TIME HI-TEMP TAPES

+550° to —70° F



TIME HI-TEMP TAPES are remarkably exposure resistant to normal or extreme atmospheric conditions even when subjected to testing equipment simulating these effects.

Ideally suited for testing in
- OVENS
- STERILIZERS
- AUTOCLAVES
- INCUBATORS
- WATER BATHS
- REFRIGERATORS
- SUB-ZERO CABINETS

TIME HI-TEMP TAPES are completely unaffected by heat, steam, cold or freezing temperatures, acids or alkalies, moisture or oxidation.

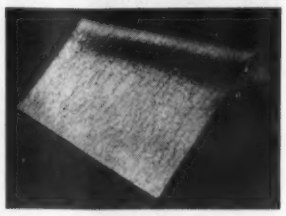
Can be imprinted with your message. For sample and prices write to Dept. 59I.

PROFESSIONAL TAPE CO., INC.
355 BURLINGTON RD. • RIVERSIDE, ILL.

▲ For more details circle NED-783 L9 on enclosed inquiry slip ▲

New Processes & Materials

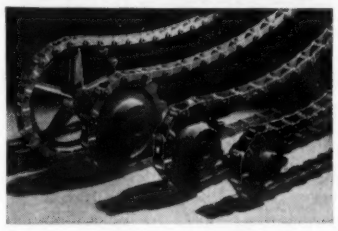
ALUMINIZED ASBESTOS CLOTH protects workers from radiant heat



Workers in steel mills or high temperature plant areas are protected from radiant heat by shields made of this aluminized asbestos cloth. It consists of asbestos cloth to which 0.0004-in. thick aluminum foil is laminated with heat-resistant adhesive. Material is sturdy and flexible, and retains its strength up to 1400° F over long periods of time. Blankets, hoods, covers, and curtains can also be made from the cloth. In tape form, it is suitable as an outer wrap for pipe lines. Made by **Johns-Manville**, 22 E. 40th St., New York 16, N. Y.

▲ For more details circle NED-785 L9 on enclosed inquiry slip ▲

STEEL PINTLE CHAIN design and assembly afford savings



Design, plus automatic forming and assembly methods of 600 Series steel pintle chain afford cost savings, especially in applications requiring capacities exceeding those of steel detachable chain. Used in a wide variety of industrial and agricultural machines, chain is produced in sizes 662, 667, 667-H, and 672, to standard detachable chain pitches. In addition to pintle chain, various attachment links are available for use in conveying applications. Made by **Locke Steel Chain Co.**, 1230 Sabine St., Huntington, Ind.

▲ For more details circle NED-786 L9 on enclosed inquiry slip ▲

DECORATIVE FINISHES created by Liquid Honing machines

Decorative or nonglare finishes can be imparted to metal and plastic parts by Vapor Blast Liquid Honing machines. The finish may be satin, for eye appeal,

or a nonglare type that makes a surface easier to read or use. Application can be to camera lenses and parts, watch bands, architectural aluminum extrusions, stainless steel pipe and fittings, machine tool dials, etc. The photo shows stainless steel strip with some of the many different decorative finishes that can be achieved. Developed by **Vapor Blast Mfg. Co.**, 3025 W. Atkinson Ave., Milwaukee 16, Wis.

▲ For more details circle NED-787 L9 on enclosed inquiry slip ▲

Don't try this with any other pipe compound

This new T-O-T upsets all the old standards for pipe thread compounds. It's *Thix-O-Tropic;* stays semi-solid until you brush it on. Can't spill, or drip, or sag. Assures quicker, cleaner, trouble-free joints every time. *Contains no lead!* Provides positive seal for hot and cold water, steam, air, gas, dilute acids and alkalies.

Amazing NEW Pipetite **T-O-T** Pipe Thread Compound
- NO DRIP
- NO SPILL
- NO WASTE
- NO DRYING OUT

Ask your supplier for Pipetite T-O-T. If he doesn't have it yet, write us, on company letterhead

THE LAKE CHEMICAL CO.
3053 W. Carroll Ave., Chicago 12, Ill.

▲ For more details circle NED-788 L9 on enclosed inquiry slip ▲

Low cost versatility

Only "Thermo-Fax" Copying Machines do so many office jobs so quickly, so easily, for so little cost!

Count on a "Thermo-Fax" Copying Machine to speed work flow throughout the office or plant. It copies a business paper or production form in just 4 seconds—by the only completely electric, completely dry, completely clean copying process.

Yet this versatile machine is more than a speedy communicator. It's also a low-cost billing machine, accounting machine, addressing machine, labelling machine. You'll use it to speed work, cut costs, in several of your present work systems. For full facts call your local dealer, or mail the coupon.

Thermo-Fax COPYING MACHINES

3M

THE TERMS "THERMO-FAX" AND "SECRETARY" ARE REGISTERED TRADEMARKS OF MINNESOTA MINING AND MANUFACTURING COMPANY

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

Minnesota Mining and Manufacturing Company
Dept. D8Q-119 St. Paul 6, Minnesota
Send me facts on the "Thermo-Fax" Copying Machine

Name _____
Company _____
Address _____
City _____ Zone ____ State ____

▲ For more details circle NED-789 L9 on enclosed inquiry slip ▲

New Clark Fork Truck attachment gives . . .

Accurate weighing without floor scales!

Now you can accurately weigh material *while it is being handled by your Clark fork lift trucks.* You eliminate the need for expensive floor scales . . . are able to quickly weigh material at any location in your factory, warehouse or storage yard.

This new Weighing Attachment is guaranteed to be accurate to 2/10's of 1% of rated capacity.

It is fast and simple to use. The entire device consists of only two major components. There are no springs or moving parts. Special overload stops protect the device against vertical and horizontal shock loads. And most important: *load positioning is not critical.* The attachment will give accurate weight regardless of where the load is placed on the forks.

A new booklet gives full details. For your copy use the reader service card or the coupon below.

Without obligation, rush full details on your Weighing Attachment.

Name _____ Title _____
Company _____
Address _____
City _____ Zone ____ State ____

CLARK® EQUIPMENT
ATTACHMENTS SECTION
Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 21, Michigan

▲ For more details circle NED-784 L9 on enclosed inquiry slip ▲

Facts on flex and expansion joints . . .
that can save you maintenance and expenses are detailed in this bulletin. Send for your copy. Write Dept. 417, RESISTOFLEX CORPORATION, Roseland, N. J.

▲ For more details circle NED-790 L9 on enclosed inquiry slip ▲

newest
ELLIOTT
tube cleaner
lightweight! air-driven!

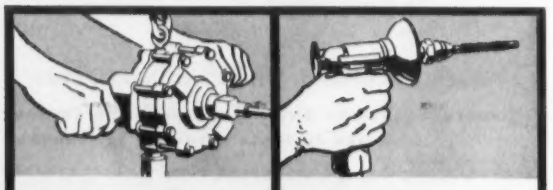
PISTOL-GRIP easy to handle by one operator

CHROME-MOLY SHAFTING (Aircraft quality) for greater strength and rigidity

FLUSHING ACTION hole near drill tip for cooling and flushing water

for condenser and heat exchanger tubes

Lightweight. Powerful. Air-driven. Trigger-action control with speed governor to prevent shaft-whip. High-speed motor reduced through planetary gears to 1500 rpm. Integral water-feeding attachment with finger-action valve which controls flow of cooling water into hollow shaft and drill or brush. Drills and brushes for varied needs. Built-in oil reservoir. Send for tube cleaner bulletin Y-48.



SUSPENSION TYPE Air, steam or electric heavy-duty motor, for removing hard, heavy deposits. Ball bearings absorb thrust in either direction.

ELLIOTT JIFFY GUN For extra-fast cleaning of light deposits in tubes ½ in. to 1¼ in. Air or water pressure shoots nylon brushes or rubber plugs through tubes.

ELLIOTT Company
Lagonda Plant—Springfield, Ohio

Y9-1A

▲ For more details circle NED-791 L9 on enclosed inquiry slip ▲

New Literature & Catalogs

Air Supply Line Accessories

Lincoln Engineering Co., Industrial Div.—Sockets, plugs, hose clamps, fittings, and tools, all of which are interchangeable with most standard makes, are listed in Catalog 227. Line of air supply accessories has been expanded.

▲ For more details circle NED-792 L9 on enclosed inquiry slip ▲

Small Basic Switches

Minneapolis-Honeywell Regulator Co., Micro Switch Div.—Details on almost 100 switches, actuators, and assemblies in four groups are found in the 20 pages of illustrated Catalog 63. Type V3 postage stamp-size switches, Type TB two-circuit switches, Type 1SX1 subminiature switches, and Type SM subminiature switches are covered.

▲ For more details circle NED-793 L9 on enclosed inquiry slip ▲

Ultrasonic Homogenizers

Sonic Engineering Corp.—Fluid-dynamic forces of liquids themselves are used to produce the sound waves in ultrasonic homogenizers, used for aeration, defibering, mixing, dispersing, and emulsifying. Techniques and applications are detailed in 6-page Bulletin 259. Units described have a 9000-gph output or higher.

▲ For more details circle NED-794 L9 on enclosed inquiry slip ▲

Power Shifted Lift Trucks

Hyster Co.—Hystamatic transmission which combines a torque converter with hydraulic engaging units governing forward-reverse and low-high ranges contributes to ease of operation of 6000 to 12,000-lb capacity Hyster lift trucks. The transmission and its operation, service, and design features are covered in a 4-page folder.

▲ For more details circle NED-795 L9 on enclosed inquiry slip ▲

Military Electronic Components

Ohmite Mfg. Co.—32-page Catalog 50 of military electronic components is simultaneously a valuable handbook on U. S. military specifications covering those components which the company makes. These include fixed and adjustable power resistors, rheostats, tantalum capacitors, and relays. Type designations for each spec are explained graphically. Summary charts in each section facilitate rapid preliminary choice of size and style.

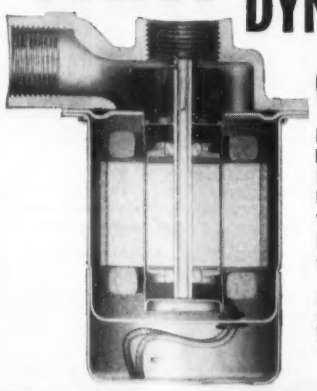
▲ For more details circle NED-796 L9 on enclosed inquiry slip ▲

Air Compressors

Dunham-Bush, Inc., Brunner Div.—Air compressors from ¼ through 20 hp are covered in 28-page Catalog 36A which features a question and answer engineering section, as well as one on accessories. Data are given on single-stage horizontal and vertical tank mounted outfits, constant-speed controlled outfits, single and two-stage powerplants, two-stage gasoline driven units, and single and two-stage simple compressors.

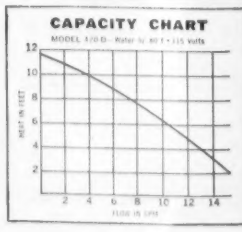
▲ For more details circle NED-797 L9 on enclosed inquiry slip ▲

NEW Fostoria Seal-less DYNAPUMP only 6¾″



New multi-purpose, bronze-fitted seal-less Dynapump is less than half the size of pumps with comparable performance! See capacity chart.

MODEL 420-D—1″ Connections — Pressure to 150 psi— Temp. to 220°F.



- No shaft seal to leak
- No spring coupling to break
- Bronze and stainless parts
- No lubrication needed
- Built-in overload protector
- Install in any position
- 5-year replacement warranty
- PRICED LOWEST OF ALL!

Dept. 1108

Write for: Form 59-1-420
FOSTORIA CORPORATION
Dynapump Division, Fostoria, Ohio

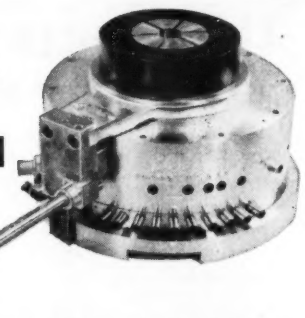
▲ For more details circle NED-798 L9 on enclosed inquiry slip ▲

HOW TO GIVE PRODUCTION PROBLEMS THE AIR

Wherever plant operations and production schedules are dependent on the delivery of clean, dry air or gas at constant pressure it's likely that a Hoffman Multistage Centrifugal Blower or Exhauster is on the job. More than 50,000 Hoffman Blowers and Exhausters — many in continuous 24 hour service—currently provide clean, dry air or gas in production operations. These range from the delicate crating of farm-fresh eggs to the rugged demands of pneumatic conveying, production washing of foods, vacuum cleaning, wrapping, packing and stacking, sewage and industrial waste treatment, circulation of liquids, etc., etc. Hoffman Blowers and exhausters produce pressure up to 10 pounds per square inch or vacuum to 12 inches of mercury in volumes up to 20,000 cfm. Statically and dynamically balanced impeller assemblies insure quiet operation and maintain uniform pressure or vacuum without need for relief valves or pressure controls. Low power consumption, variable volume, quiet performance, low maintenance cost and easy installation offer additional production savings. For free illustrated bulletin AB 104 write Dept. LL, **U.S. Hoffman Machinery Corporation, Air Appliance Division, 103 Fourth Avenue, New York 3, N.Y.** *Advt.*

▲ For more details circle NED-799 L9 on enclosed inquiry slip ▲

REDMER Index Chuck with Air Operated Collet



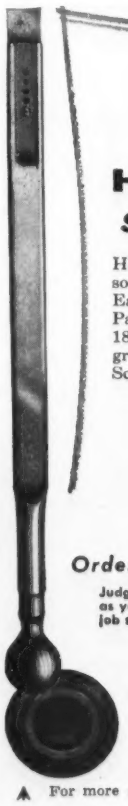
SIMPLIFIED DESIGN SPEEDS UP OPERATION AND REDUCES INDEXING ERRORS

The REDMER AIR INDEX CHUCK speeds up production and eliminates many costly indexing errors in either tool room or production line operation. Indexing positions on outside of chuck simplify changeovers. Lever locks into position after each index. Can be used as holding fixture without indexing for milling, drilling, tapping, etc. Twelve indexing positions. Collet capacity 1/16″ to 2″. Complete with standard round Brown & Sharpe type collet, two air hose, Redmer Foot Control and Valve, Filter, Regulator and Lubricator.

Send for complete details, specifications, price list and catalog of all REDMER chucks.

REDMER AIR DEVICES, INC.
Guntersville • Box NED • Alabama

▲ For more details circle NED-800 L9 on enclosed inquiry slip ▲



Anderson
IMPROVED HAND SCRAPER
Saves Costly Regrinding

Here are just a few of the advantages of Anderson Hand Scrapers (1) Faster Cutting, (2) Easier to Use, (3) Just the Right Spring, (4) Palm Fitting Grip, (5) Light in Weight, (6) 18″ - 20″ - 22″ lengths. After the original regrinding most users of this new Anderson Hand Scraper find that only honing is necessary.

$6.75 (18″) with high speed steel blades

$9.85 (18″) with carbide-tipped blades

$1.75 for rubber bumper shown below

Order Today . . . Money-Back Guarantee

Judge for yourself: Order as many Model 5-A Scrapers as you want. Use them a full week . . . if they don't do the job send them back to us for refund.

Write for Bulletin 12-11
ANDERSON BROS. MFG. CO.
ROCKFORD, ILLINOIS

▲ For more details circle NED-801 L9 on enclosed inquiry slip ▲

The OFFICE VALET® Lockerette

Combines the best features of both lockers and coat racks.

Wraps are exposed to air and light Employees do not face the weather in damp wraps that have been crumpled in dark lockers—do not eat soggy lunches, soaked by wet hats or gloves. Each person has his own spaced coat hanger, ventilated hat shelf and 12" x 12" x 15" deep lock box for lunches, tools and personal effects. Improves health and morale—lower absenteeism.

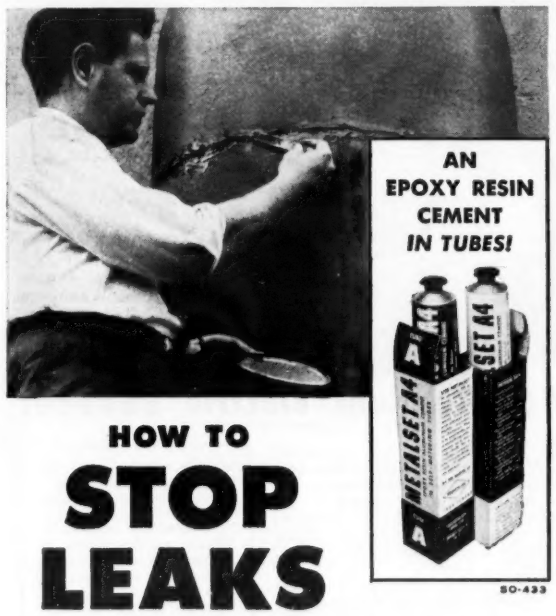
Lockerettes save space too . . . the No. 6-12 (2-column) accommodates 12 people in 6 feet; the No. 9-18 (illustrated) accommodates 18 in 9 feet.

No. UM-4 Umbrella Rack

WRITE FOR BULLETIN LO- 8

VOGEL-PETERSON CO. Rt. 83 & Madison St. Elmhurst, Illinois

▲ For more details circle NED-802 L9 on enclosed inquiry slip ▲



HOW TO

STOP LEAKS

with METALSET A4

METALSET makes revolutionary epoxy resin easy to mix and use. Just squeeze equal lengths from each tube . . . and mix. You use only the amount you need for one job. The rest is there for the future job. METALSET ends messy measuring.

Epoxy resin cements contain no solvent to cause shrinkage, or to harden in the tube. You make only one application, however thick. It is water and oil-proof, chemically resistant. Excellent adhesion to iron, steel, and aluminum. And METALSET is flexibilized, to resist thermal and mechanical shock.

Advantages of METALSET A4

- Adhesion: to most metals, glass, wood, ceramics
- Hard: can be machined by any conventional method
- Stable: waterproof, oilproof, resistant to alkalis and acids
- Non-flammable
- Made with minimum-toxicity materials only

TYPICAL APPLICATIONS

- Stops leaks in pipes, tanks, concrete
- Sets loose parts tight
- Smooths and fills dents
- Caulks windows, roof fixtures, sidewalk elevators

METALSET in twin, self-metering tubes: only a little more effort to get the best!

METALSET®

Made by Smooth-On Manufacturing Company

ESTABLISHED IN 1895

572 Communipaw Avenue, Jersey City 4, N. J.

METALSET IS A REGISTERED TRADE-MARK, U. S. PATENT OFFICE

▲ For more details circle NED-803 L9 on enclosed inquiry slip ▲

New Processes & Materials

COIL & FILTER CLEANER is sprayed on and flushed off

A water soluble blend of synthetic penetrants, Metalene chemical compound for cleaning and restoring cooling coils and permanent filters in air conditioning installations is simply sprayed on and flushed off. Diluted with water, the compound is safe, odorless, nontoxic, nonflammable, and noncorrosive. It is harmless to paint and can be used as the adhesive to treat filters after cleaning. A light film of Metalene applied after cleaning also inhibits rust. Formulated by **Lester Laboratories, Inc.**, Box 4897, Atlanta 2, Ga.

▲ For more details circle NED-804 L9 on enclosed inquiry slip ▲

FERROUS METAL PRIMER vehicle wetting qualities improved

Improved wetting qualities of Rustikote primer for rusted iron and steel surfaces enables it to penetrate rust and bond to base metal. Primer is used over tightly clinging rust after loose rust has been removed. Tests indicate good surface protection and high life expectancy. Finish coats in a variety of colors are available. Formulated by **Tropical Paint Co.**, 1246 W. 70th St., Cleveland 2, Ohio.

▲ For more details circle NED-805 L9 on enclosed inquiry slip ▲

CELLULOSE WADDING for protective packaging

Ability to retain required bulk in continuous use is inherent in C-B Laminate forms of Cel-Fibe cellulose wadding, applicable as a protective packaging accessory or product component. Wadding is made by a procedure of multi-layer bonding which gives it unusual resistance to separation or shredding. It is also soft, pliable, strong, nonabrasive, and easy to handle; has neutral pH and low sulfur content; and is relatively free of powder and dust. Made by **Personal Products Corp.**, Cel-Fibe Div., Milltown, N. J.

▲ For more details circle NED-806 L9 on enclosed inquiry slip ▲

HERE'S A HELPFUL AND CONVENIENT REFERENCE SOURCE

for comparative specifications, chemical analyses minimum physical properties... clearly charted in SHENANGO'S NEW BULLETIN NO. 157

This invaluable chart of nonferrous alloys centrifugally cast by Shenango is readily available upon request. For your free copy, write to this publication or the Centrifugally Cast Products Division, The Shenango Furnace Company, Dover, Ohio

SHENANGO CENTRIFUGAL CASTINGS

COPPER, TIN, LEAD, ZINC BRONZES · ALUMINUM AND MANGANESE BRONZES
MONEL METAL · NI-RESIST · MEEHANITE METAL · ALLOY IRONS · DUCTILE IRON

▲ For more details circle NED-807 L9 on enclosed inquiry slip ▲

Most Complete Line of Specialty Turrets on the Market!

. . . All Rockwood Turrets discharge FogFOAM, Solid FOAM Stream, WaterFOG, Solid Water Stream. You name it — Rockwood's got the turret —

- **Portable Type**—Off the truck and into action in seconds! Goes wherever a fire fighter can bring the proper hose line into action!
- **Direct Manual Control Type**—Gives fire fighters "out-in-the-open" control from cab roof!
- **Remote Manual Control Type**—Easily handled by man in driver's seat. Ideal for fast action!
- **Extended Manual Control Type**—Turret nozzles extend 10 to 20 feet above remote control station on deck or ground on standard units . . . greater remote extensions for special applications.
- **Remote Hydraulic Control Type** — Power-controlled from within the cab. Single and dual models. Widely used on air crash rescue fire-fighting trucks.

Get full details on the complete line of fire-fighting products. Write ROCKWOOD SPRINKLER COMPANY, Portable Fire Protection Division, 565 Harlow Street, Worcester 5, Massachusetts.

ROCKWOOD SPRINKLER COMPANY

A Division of The Gamewell Company

Engineers Water . . . to Cut Fire Losses

Distributors in all principal cities

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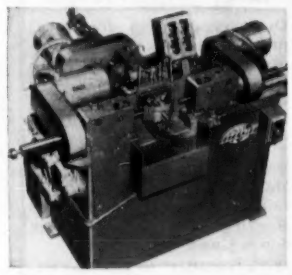
HYDRO - BORER UNIT

Lowers your costs on precision boring



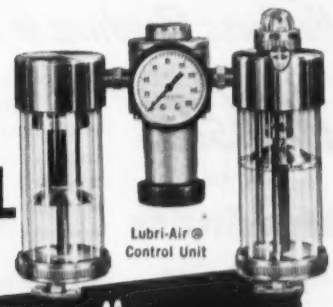
In the special application shown at the left, aluminum die castings are precision bored by three Greenlee S-6 Hydro-Borers mounted on a welded steel base. Greenlee can help you reduce your boring costs. Write for further information.

GREENLEE BROS. & CO.
1701 MASON AVE.
Rockford, Illinois

▲ For more details circle NED-809 L9 on enclosed inquiry slip ▲

New!

AIR CONTROL UNITS



Lubri-Air® Control Unit

Automatically

- ★ Filter pressurized air to provide a clean, dry air supply
- ★ Compensate for fluctuations in air pressure
- ★ Compensate for variations in cfm requirements of pneumatic equipment
- ★ Adjust amount of misted lubricant to meet changing cycle rates

619-C

T.M. Registered — Pat. Pending

Write Dept. NED-1159 The Bellows Co., Akron 9, Ohio, for descriptive Bulletin LA-15.

The Bellows Co.

DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION (IBEC)

AKRON 9, OHIO

OTHER INDUSTRIAL DIVISIONS OF IBEC: Sinclair-Collins Valve Co., Valvair, Akron, Ohio • V. D. Anderson Co. Cleveland, Ohio

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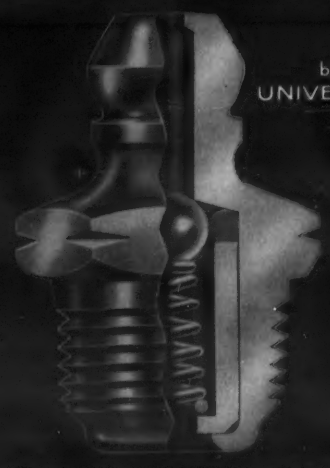
LEAK PROOF
Hydraulic GREASE FITTINGS



MANUFACTURERS OF LUBRICATION FITTINGS AND ACCESSORIES
For our new Industrial Catalog write
UNIVERSAL LUBRICATING SYSTEMS, Inc.
Industrial Division • Oakmont, Pa.

▲ For more details circle NED-812 L9 on enclosed inquiry slip ▲

POWERFUL NEW PLUNGER CLEARS
CLOGGED TOILETS
in a jiffy!

Clear messy, stuffed toilets
Cut maintenance costs with
TOILAFLEX
Toilet ALL-ANGLE Plunger

Ordinary plungers don't seat properly. They permit compressed air and water to splash back. Thus you not only have a mess, but you lose the very pressure you need to clear the obstruction.

With "TOILAFLEX", expressly designed for toilets, no air or water can escape. The full pressure plows through the clogging mass and swishes it down. Can't miss!

Get a "TOILAFLEX" for your home too. Positive insurance against stuffed toilet.

- Double cup, double-pressure
- Tapered tail gives air-tight fit
- Designed to flex at any angle
- Centers, can't skid around

$2.65 Fully Guaranteed

Order from your Supplier of Hardware or Janitor Supplies

THE STEVENS-BURT CO., NEW BRUNSWICK, N. J.
A Division of The Water Master Company

▲ For more details circle NED-813 L9 on enclosed inquiry slip ▲

Hardness Readings in 2 seconds!

Webster
PORTABLE
Hardness Testers
FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

Other models available

WEBSTER INSTRUMENTS, INC. Dept. N, 11856 Mississippi Ave. Los Angeles 25, California

▲ For more details circle NED-814 L9 on enclosed inquiry slip ▲

New Literature & Catalogs

Multiple Spindle Drill Heads

Cleveland Pneumatic Industries—Of multiple spindle design and fully adjustable as to drilling pattern, Pneumatic/Johnson drill heads are offered with 7, 9, 11, and 13 spindles. They range in drill area from 7 to 13 in. Complete details of these accessories as well as recommended spindle sizes for various drilling jobs are given in 14-page Catalog 7698.

▲ For more details circle NED-815 L9 on enclosed inquiry slip ▲

Wiring Devices & Electrical Specialties

Eagle Electric Mfg. Co.—Over 1500 electrical wiring devices, lamps, and specialty products are pictured and described in 80-page catalog. Cross-indexing simplifies finding specific or related products. Information is given on UL-approved wiring devices, extension and cord sets, fuses, wall plates, switches, and lamps.

▲ For more details circle NED-816 L9 on enclosed inquiry slip ▲

Hydraulic Hose Guide

Hydraulics, Inc.—16-page illustrated guide to hydraulic hose and assemblies for industrial equipment outlines types for low to high pressure service. Thread and fitting information is given on permanent and reusable types of couplings.

▲ For more details circle NED-817 L9 on enclosed inquiry slip ▲

Heavy Duty Band Saw

Henry G. Thompson & Son Co.—Milband band saw machine tools are heavy duty band saws which use a 1-in. wide by 15-ft long blade to cut up to 10 x 14-in. steel or other metal stock. Saws feature infinitely variable blade speed from 40 to 360 fpm, manual or automatic control, 0 to 24-in. automatic bar feed, and integral coolant system. Full information is given in 6-page Bulletin 502.

▲ For more details circle NED-818 L9 on enclosed inquiry slip ▲

Welding Manual

Smith Welding Equipment Corp.—40-page "Welding Manual" is descriptive of a complete line of gas welding, cutting, and accessory equipment. Charts show flow capacities of gas pressure regulators. Technical data are given to aid in selection of proper equipment for every need.

▲ For more details circle NED-819 L9 on enclosed inquiry slip ▲

Bonding Aluminum with Adhesives

The advantages of adhesive bonding of aluminum, as well as the techniques and adhesives which are available for this purpose, are discussed in 24-page guidebook. Recent advances in this process have made possible sandwich panels with honeycomb aluminum cores, beaded aluminum panels for supersonic aircraft, and aluminum evaporators and cooling coils for freezers and refrigerators. Advantages and disadvantages of adhesive bonding are covered. Copies can be obtained only by writing Reynolds Metals Co., Dept. PRD-21, Richmond 18, Va.

▲ For more details circle NED-820 L9 on enclosed inquiry slip ▲

FREE BOOKLET may solve your hand tool problem...

It's yours for the asking: Sargent's new booklet "Industrial Application Data for Plier-Type Tools." Contains detailed case histories on cutting, shaping, crimping, punching and holding problems solved with Sargent precision hand tools. Describes and illustrates Sargent's parallel action, compound hand pliers, punches and special purpose tools many of which are designed on a custom basis. Mail coupon now for your copy.

SARGENT & COMPANY, New Haven 9, Conn. Dept. 19-L

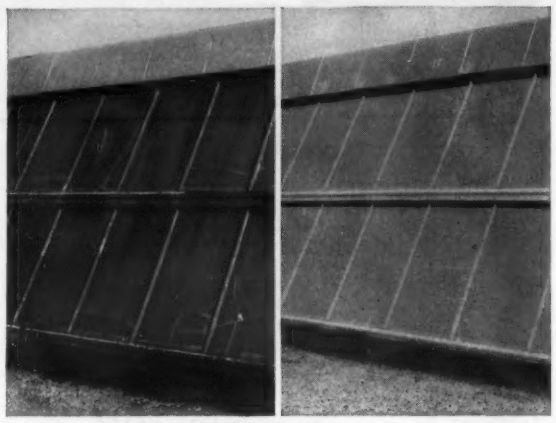
Gentlemen: Please send me your new booklet "Industrial Application Data for Plier-Type Tools."

Name_____ Title_____
Company_____
Street_____
City_____ Zone____ State_____

Sargent & Company, New Haven 9, Conn. Dept. 19-L
Manufacturers of quality locks, hardware and tools since 1864.

▲ For more details circle NED-821 L9 on enclosed inquiry slip ▲

BEFORE AFTER



Replace cracked glass
with Structoglas

Don't put up with cracked glass. Put up *shatterproof* Structoglas fiberglass panes—*end breakage for good.* Tinted Structoglas lets in free natural light without glare. No painting needed; resists fading and erosion. Easy to install with ordinary glazing methods. Glaze once and for all with Structoglas.

Write for detailed literature

structoglas®

Structoglas Inc., Dept. 1106, Cleveland 9, Ohio 5906

▲ For more details circle NED-822 L9 on enclosed inquiry slip ▲

SO QUIET you can hardly hear it . . . so efficient it gets dirt other sweepers miss . . . so economical it often pays for itself in a year!

New Tennant *Electric* Sweeper

● You'll like the quiet dependability of this new battery-powered TENNANT "80-E" Sweeper! It's exclusively "aisle-designed" to clean aisles up to 8½ ft. wide in one round trip. And in open areas it easily sweeps more than 90,000 sq. ft. per hour.

Sweeps full shift on a single battery charge under normal operating conditions.

WRITE TODAY *for illustrated bulletin!*

- Sweeps 42" path with main brush (53" with sidebrush).
- Sweeps clean at all speeds. Has dual 24 v motors—one for travel, one for brush-vacuum.
- Efficient vacuum, 4200 sq. in. filter assure CLEAN sweeping.
- Economical to operate and maintain, especially under dusty sweeping conditions.
- 12 cu. ft. hopper; dumps hydraulically in 10 seconds.

TENNANT *Industry's Most Widely Used* POWER SWEEPERS

G. H. TENNANT COMPANY • 715M NO. LILAC DRIVE • MINNEAPOLIS 22, MINNESOTA

▲ For more details circle NED-823 L9 on enclosed inquiry slip ▲

N-E-W

...and only

$15.00* (In U.S.A.)

That's all you pay for this TRICO "Type J" mist coolant unit, yet you will increase production as much as 500% on small drilling, tapping, milling, sawing and grinding operations.

*Complete with magnetic nozzle holder as shown.

- *compact . . only 3" x 5"*
- *separate air and coolant valves*
- *convenient mounting stud*
- *attaches to existing shop airline*
- *shatter-proof 8 oz. reservoir*
- *magnetic nozzle holder positions anywhere*
- *controlled discharge*
- *neoprene flexible coolant line*

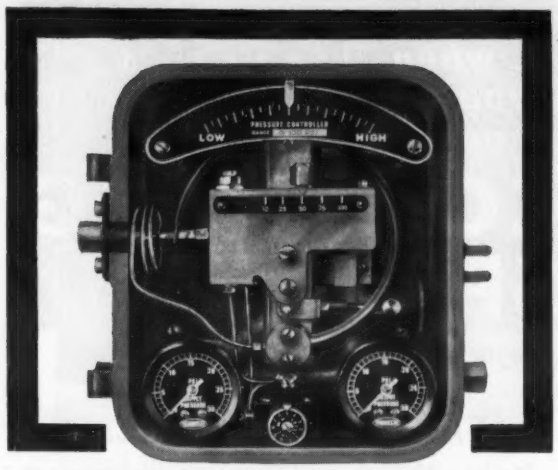
Permits faster speeds—Tools stay sharp longer—Obtain finer finishes and accuracy.

TRICO-MIST Units Also Available In 1 and 5 Gal. Sizes

SEND FOR BULLETIN NO. 37

TRICO FUSE MFG. CO. MILWAUKEE 12, WIS.

▲ For more details circle NED-824 L9 on enclosed inquiry slip ▲



NEW! 2700 Series Controllers Now Available With Reset

A new adjustable reset unit widens the scope of application for these popular Masoneilan Pressure Controllers. The unit is also available in 3700 Series Temperature Controllers.

These regular features are retained:

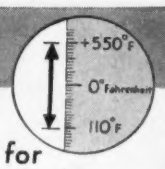
- Simple control mechanism
- Adjustable proportional band
- Convenient set point reference
- Reversible action without extra parts
- Choice of valve, wall or panel mounting

These controllers are modestly priced and offer top value in reliable performance. Send for complete information.

MASON-NEILAN
69 Nahatan St., Norwood, Mass.
Division of Worthington Corporation

▲ For more details circle NED-825 L9 on enclosed inquiry slip ▲

* If It's New, It's No Doubt Mystik



NEW! 7000-G TAPE for
Extreme Temperature Range —110° to +550° F.

MYSTIK BRAND FIBERGLAS TAPE
with Silicone Adhesives

A new concept in pressure-sensitive tapes—an essentially inorganic pressure-sensitive tape accepted by the aircraft, electrical and electronics industry.

7000-G has a tightly woven, high-tensile Fiberglas® backing with a pressure-sensitive silicone adhesive. Superior thermal and electrical properties make it ideal for many applications previously not possible for pressure-sensitive tape.

(Conforms to Government Specification MIL-1-19166. Approved as Class H Insulation.)

Write for full information on Mystik Brand 7000-G and the complete Mystik line of high and low temperature tapes using silicones with Mylar®, aluminum, copper, and Teflon.

Mystik Adhesive Products, Inc.
2635 North Kildare Ave.
Chicago 39, Illinois

MYSTIK BRAND TAPES SELF-STIK

PACKAGING • PROTECTIVE COVERING • PRINTABLE • ELECTRICAL TAPES

▲ For more details circle NED-826 L9 on enclosed inquiry slip ▲

PERFECT PROTECTION—
INDOORS OR OUTDOORS

McKINSTRY
JIC
electrical
wiring boxes

McKinstry totally enclosed JIC Wiring Boxes are especially designed for use on machinery and buildings, indoors or outdoors—wherever seepage of dirt, dust, oil, or water creates a problem.

Manufactured to JIC standards of 16 & 14 gauge bonderized sheet steel with all seams welded.

Cover is held to box with external clamps and hinges and is connected by a chain. External mounting feet are welded to the box. Finish is baked on silver grey hammertone over bonderized sheet steel.

Write Dept. 20-G for catalog and price list showing complete line of McKinstry Electrical Boxes, Panel Boards, Wireways and Fittings.

McKinstry Metal Works, Inc.
285 McKinstry Avenue
CHICOPEE, MASSACHUSETTS

▲ For more details circle NED-827 L9 on enclosed inquiry slip ▲

New Processes & Materials

ICE MELTING COMPOUND will not damage pavement

This 25-lb package of Ice Rem Super ice and snow melting compound will last the average small industrial plant about 1 month. Polyethylene bag can easily be carried while applying the compound and cannot be harmed by moisture. Ice Rem Super is in thin, crystalline chip form which stays put when applied. It generates heat immediately on contact with ice and snow. Product is white, leaves no messy residue, and will not damage pavement or vegetation. It is also supplied in 100, 200, and 300-lb polyethylene-lined fiber drums and in large bulk quantities. Ton shipments are made in 80-lb bags. Made by **Speco, Inc.**, 7308 Associate Ave., Cleveland 9, Ohio.

▲ For more details circle NED-828 L9 on enclosed inquiry slip ▲

ZINC COATING applied over bare steel

Single coat of Zinkote only a few mils thick protects bare steel surfaces exposed to water, severe weathering, salt spray, and abrasion. Inorganic nontoxic coating cures itself and bonds both physically and chemically to the steel. It can be used wherever galvanizing is suitable. Product sets hard and water resistant in a few hours and achieves maximum water resistance in several days. It contains no volatile or flammable materials and can be used in poorly ventilated areas. Application is by brush, spray, or roller. Made by **Amercoat Corp.**, 4809 Firestone Blvd., South Gate, Calif.

▲ For more details circle NED-829 L9 on enclosed inquiry slip ▲

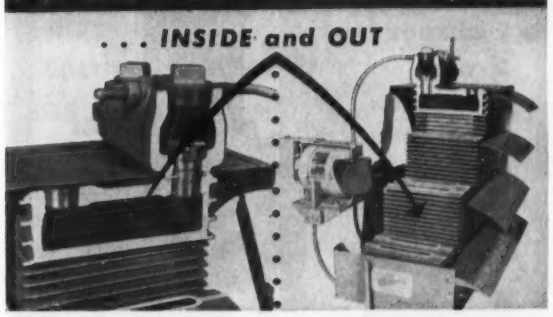
MULTIPURPOSE LUBRICANT in tubes for grease gun application

High melting point, lithium-base, multipurpose grease provides protection against rust in stored or on-the-road equipment. It is offered in tubes for grease gun

application. Grease offers maximum adhesion to metal under all weather and operating conditions. Made by **South Penn Oil Co.**, Pennzoil Div., Drake Theatre Bldg., Oil City, Pa.

▲ For more details circle NED-830 L9 on enclosed inquiry slip ▲

it's the material that makes the difference



CORROSION causes heating equipment failures!

BUT NOT WHEN YOU USE

GRID *cast iron construction*

▶ UNIT HEATERS ▶ BLAST HEATERS ▶ RADIATORS

CORROSION internally, caused by electrolytic action as in copper tubes, can't happen in GRID's cast iron steam chambers and headers. Nor can acid condensate corrode the bottom connections. Cast Iron, internally, resists corrosion. CORROSION externally, caused by acid fumes cannot destroy GRID's cast iron finned heating surface. Widely spaced fins cast integral with the steam chamber will not corrode externally.
Send for complete information—catalog 956.

D. J. MURRAY MANUFACTURING CO.
Manufacturers Since 1883
WAUSAU, WISCONSIN OFFICES IN PRINCIPAL CITIES

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Specify DE-STA-CO
FOR SPLIT-SECOND CLAMPING

The World's *First* Line of production toggle clamps is your *first* choice for any work-holding problem. If you require fast loading, clamping and unloading of wood parts (or other materials) and *positive control* for gluing, shaping, sawing, assembly or other phases of furniture production, check your De-Sta-Co Catalog *first*—or call your nearby distributor.

The clamps shown are representative of the 140 models and sizes in 13 basic styles; specials are available for your extraordinary problems. Sizes range from 1 ounce Tiny Toggles with 42 pounds holding pressure to 5 pound models developing 2 tons. All have features which are recognized as the standards which others imitate but never equal and you can get fast service and the good advice of top sales engineers from our stocking distributors in every industrial area.

DE-STA-CO Originators of Production Clamping
DETROIT STAMPING COMPANY
420 MIDLAND AVENUE • DETROIT 3, MICHIGAN

▲ For more details circle NED-832 L9 on enclosed inquiry slip ▲

HERE'S THE HUB

of the
WHEEL INDUSTRY

DICO 5 BOLT
8" - 9" - 12" DEMOUNTABLE **WHEELS**

DICO hubs are designed to meet radial, thrust and torsional loads. The 5-bolt construction of DICO wheels is a proven automotive practice.

ONE HUB FITS ALL WHEELS

4.80/4.00x8	2.50"	Standard Rim
4.80/4.00x8	3.75"	Wide Base Rim
5.00x8	3.75"	Standard Rim
5.70/5.00x8	4.25"	Wide Base Rim
5.50x8	4.25"	Wide Base Rim
6.90/6.00x9	4.00"	Standard Rim
4.80/4.00x12	4.00"	Wide Base Rim
5.30/4.50x12	4.00"	Wide Base Rim
6.00x12	4.00"	Wide Base Rim

. . . and HERE'S THE BRAKE
FOR 8" - 9" - and 12" WHEELS

DICO *"Surg-o-Matic"*
INDUSTRIAL BRAKES

7" Drum with 31 square inches lining surface.

DICO

"Surg-o-Matic" self-operating brake actuator incorporated in coupler hitch for Trailer Service. Brakes also supplied for lever operation.

201 S. W. 16th St., Des Moines 5, Iowa

▲ For more details circle NED-833 L9 on enclosed inquiry slip ▲

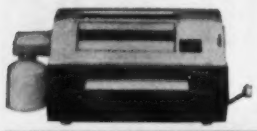
Specify the Best in Engraved Tools

The quality of your product deserves equal quality in your marking.
Our complete inventory of alloy steels permits instant selection to meet your requirements.
Style of lettering is tailored to your job.
Quotations furnished promptly upon request.

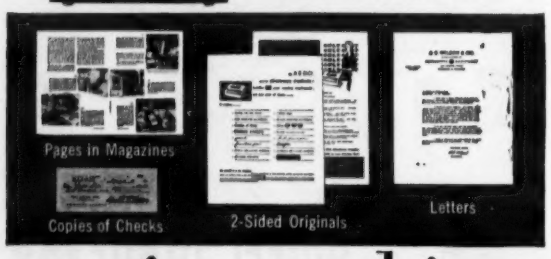
IF IT'S WORTH MAKING, IT'S WORTH MARKING.

GEO. T. SCHMIDT, INC.
1800 W. Belle Plaine Avenue
Chicago 13, Illinois

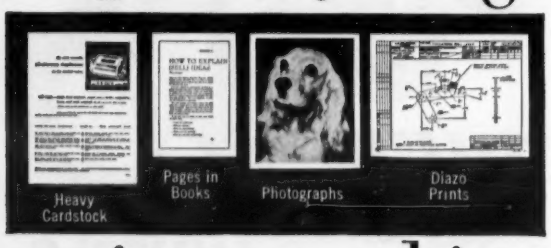
▲ For more details circle **NED-835 L9** on enclosed inquiry slip ▲



ONLY THE NEW A-B-DICK PHOTOCOPIER model 110



copies anything



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Here's the perfect solution to all your photocopying requirements . . . not just part of them!

No brown, muddy, flimsy copies . . . copies are sharp jet-black on bone white or on any one of 5 eye-ease colors (ideally suited to color-keyed systems work)—

Makes copies of anything printed, typed, duplicated, written, photographed, drawn . . . in any color . . . and copies are permanent, not affected by heat or light . . . photo-exact, often better than the original!

And now with the new, exclusive A. B. Dick multi-copy process you make several copies faster than ever before. This new process gives your photocopier greater versatility, economy and cuts copy time substantially on repetitive jobs.

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Please send me information about the NEW A. B. Dick Photocopier, model 110 and the new multi-copy process.

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Position_____
Company_____
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City_____ Zone_____ State_____

▲ For more details circle **NED-836 L9** on enclosed inquiry slip ▲

New Literature & Catalogs

Conveyors of Various Types

Sage Equipment Co.—Construction details, application photos and information, and complete specifications for an extensive line of conveyors are found in 48-page Catalog A-101. Covered are gravity wheel, Wheelrail, gravity roller, live roller, slat and chain, portable and horizontal belt, and floor to floor conveyors, plus power driven dumbwaiters, and special conveyor equipment.

▲ For more details circle **NED-837 L9** on enclosed inquiry slip ▲

Vises & Their Uses

Will-Burt Co.—Semihumorous description of the Versa-Vise and its accessories is found in illustrated bulletin, "How To Be Well-Versed on Vises." Some of the many uses for the multiposition vise in wood, metal, and plastics working are shown. Its specifications are included.

▲ For more details circle **NED-838 L9** on enclosed inquiry slip ▲

Abrasive Wheel Recommendations

Carborundum Co.—Over 1600 tested abrasive wheel recommendations for grinding everything from agate to zirconium are listed alphabetically in 60-page "Catalog of Specific Grading Recommendations." Material, work, and operation are given, along with the recommended abrasive, grit, grade, and bond.

▲ For more details circle **NED-839 L9** on enclosed inquiry slip ▲

Automation Controls

De-Tec-Tronic Corp.—Electronic automation controls for steel and tinplate mills, can manufacturers, metal decorators, and fabricators are briefly described in illustrated Engineering Bulletin 859-D. Electromagnetic type controls include double sheet detector, proximity line flow controls, and coil steel thickness gage, and coil steel weld detector. Five types of photoelectric controls are also covered.

▲ For more details circle **NED-840 L9** on enclosed inquiry slip ▲

Research & Production Facilities

Breeze Corp.—Technological versatility and production capabilities of this company are subject of 42-page brochure. It gives a simulated tour of the plant which produces items ranging from radio shielding, generators, actuators, and ignition systems to welded bellows units and cargo and rescue winches. All equipment in the production and quality control departments and engineering lab are described.

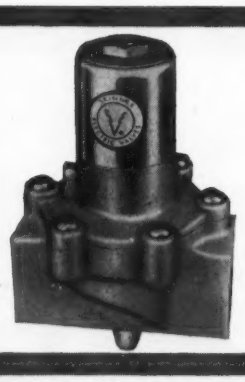
▲ For more details circle **NED-841 L9** on enclosed inquiry slip ▲

Semiconductor Products

First issue of SPAN (Semiconductor Products Application News), a bi-monthly publication with technical data and application information on silicon semiconductor devices, is now available. It contains a research article on soldering of pure aluminum and on switching circuits-recovery time measurements. To get on mailing list write to Hoffman Electronics Corp., Semiconductor Div., 1001 Arden Dr., El Monte, Calif.

▲ For more details circle **NED-842 L9** on enclosed inquiry slip ▲

Skinner 2-way solenoid valves provide high flow at low cost



Orifice sizes: ½", ¾", 1" with ⅜", ½", ¾", 1" NPT ports.
Operating pressure differential: 5 to 150 psi.
Media: oil, air, water.
Advantages: small, compact; built to UL standards; forged naval brass body, stainless steel internal parts; soft synthetic inserts and seals for bubble-tight sealing; fully supported diaphragm; mounts in any position.
Available: normally open or normally closed in standard or explosion-proof construction.

Contact a Skinner Representative listed in Yellow Pages or write us at Dept. 43N.

THE CREST OF QUALITY

SKINNER ELECTRIC VALVES
THE SKINNER ELECTRIC VALVE DIVISION,
THE SKINNER CHUCK COMPANY • NEW BRITAIN, CONNECTICUT

▲ For more details circle **NED-843 L9** on enclosed inquiry slip ▲

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Specify VEEDER-ROOT No. 1591
Quick Reset, High Speed Magnetic Counter

The No. 1591 is designed for accurate, dependable remote indication of machine operation, or for counting articles at high speed. Speed is 3000 counts per minute, 4 or 6 figures, manual or electrical reset, and made for panel mounting. Maximum panel area required is: 1.7" x 2.1" for four figures and 1.7" x 2.8" for six figures. The 1591 is *available from stock.*

Send for Veeder-Root Technical Information. Complete catalog data will be sent to you at once and application assistance is available from a Veeder-Root Counting Engineer if desired. Write or call today.

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HARTFORD 2, CONNECTICUT
"The Name that Counts"

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CIRCUIT-MASTER
missing parts detector
detects non-ejection mis-feed • buckling end-of-material

Priced as low as $271.75 complete!

Protect all your dies from damaging overloads for less than the replacement cost of one. Circuit-Master's patented electronic circuits automatically stop your machines BEFORE an unejected part can cause a die-damaging overload.
Simple to install, no changes to equipment or wiring required—Circuit-Master is completely automatic, no adjustments of any kind.
Write, wire, phone now for detailed bulletin NED-1159.
U. S. and foreign patents pending

WINTRISS, INC.
Originators and manufacturers of Circuit-Master Overload Detector, Autotransfer, Automat, Automold and Missing Parts Detector.
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Representatives: A few territories open on an exclusive, protected basis.

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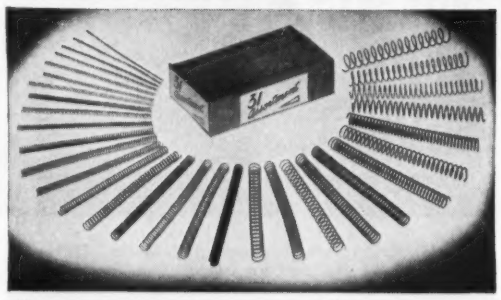
Stock SPRING assortments



Our #31 (compression) Spring Assortment folders are now available and yours for the asking. Our #28 (extension) Spring Assortment folders are also available. Ideal for tool rooms and maintenance work. To overcome the faults of ordinary assortments, which seem to contain "every spring except the one needed", design efforts were not confined to the springs alone; rather, loadings and dimensions were analyzed to assure the user of greater probability in having the correct spring on hand, whatever the application.

We also manufacture to special order.
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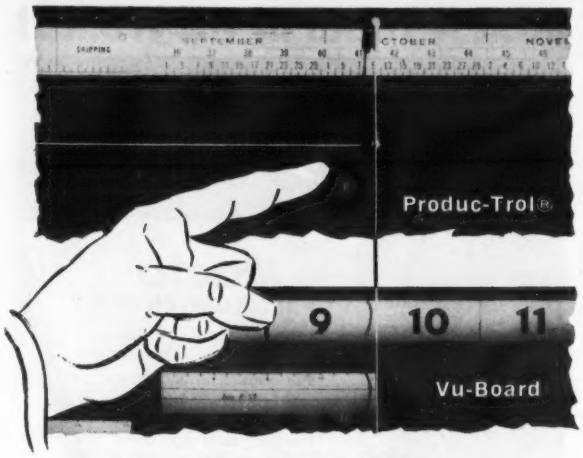

Put your finger on it FAST... with the Wassell TWIN CONTROLS

You can put your finger on trouble in seconds with the Wassell **TWINS**

Produc-Trol® will give you delivery dates, parts supply, project status.

Vu-Board will tell you if the machines are loaded to meet those dates.

There's no digging in files or calling for reports . . . The facts are right in front of you to foresee problems in time to solve them.

For more information or a demonstration of how the Produc-Trol — Vu-Board twins can help you save time and dollars, write:

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DEPARTMENT N-10 • WESTPORT, CONNECTICUT • EST. 1935

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COST REDUCTION is Product Designers' NO. 1 PROBLEM...

AND NICE CAN HELP LOWER COSTS

Product Designers will find many cost saving advantages in the use of NICE Ball Bearings. NICE precision, semi-precision and unground bearings are designed to provide the functionally and economically correct answer to most application problems.

WRITE FOR CATALOG NO. 190

NICE

NICE BALL BEARING CO.
NICETOWN • PHILADELPHIA • PENNSYLVANIA

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NEW...

an advanced concept in metering small flows

The Brooks Sho-Rate "50" is a new design idea in purge meters. It offers the complete interchangeability, dependability and structural strength that's been needed for a long time.

- *Slip-out Tubes*
- *Side-plate Construction*
- *Rotatable End-fittings*

The Sho-Rate "50" Purge Meter gives all this . . at a very low cost. *Send for complete facts.*

BROOKS ROTAMETER COMPANY
1159 K STREET • LANSDALE, PA.
WRITE FOR BULLETIN 135

BROOKS and SHO-RATE are trade-names

▲ For more details circle **NED-849 L9** on enclosed inquiry slip ▲

New Processes & Materials

EPOXY ADHESIVE
bond strength is 3000 psi

Curing at room temperature through chemical action, Epox-Cement resists water, solvents, heat or cold, and fungus. It also has good dielectric properties and does not shrink. Bond strength is 3000 psi on metals, ceramics, wood, glass, plastic, and other materials, including those normally difficult to bond to cement. Two tubes of 3-oz kit contain a base resin and a hardener which must be mixed prior to use. Price is $3.25. Made by **G-C Electronics Co.**, 400 S. Wyman St., Rockford Ill.

▲ For more details circle **NED-850 L9** on enclosed inquiry slip ▲

RESIN-RUBBER PLASTIC
has minimum flow, creep under load

Ability to withstand heat while maintaining usable strength up to 200° F is inherent in Kralastic MM, a medium impact resin-rubber blend plastic with a low tendency to creep or flow under load. Rigidity is about twice that of nylon and its resistance to creep is four times greater. It has high abrasion and corrosion resistance and low moisture pick-up. Various colors are available. Parts molded from the thermoplastic have good gloss and can be painted, printed, and cemented with solvents. Price is 50 cents per pound. Made by **United States Rubber Co.**, Naugatuck Chemical Div., Naugatuck, Conn.

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PIPE JOINT SEALER
also stops steam, oil, water leaks

Supplied in putty form, Plastic Lead for soil pipe joints and other plumbing uses is easily used in corners and inverted fittings. It will not shrink or crack; is unaffected by water, oil, steam, or gasoline; and can be used to stop leaks in lines carrying these materials. Sanitary fixtures can be repaired with Plastic Lead, offered in ½ and 1-pt, 1-qt, and 1-gal cans. Made by **Magic Iron Cement Co.**, 5403 Bower Ave., Cleveland 27, Ohio.

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to keep hydraulic valves free and functioning properly use . . .

FERROFILTER®

MAGNETIC SEPARATORS

High Pressure FERROFILTER Magnetic Separators protect hydraulic systems in a wide variety of industrial equipment as well as aircraft, missiles and ground support equipment. They remove microscopic ferrous particles which may pass through edge-type strainers and even escape conventional cartridge type filters.

FERROFILTERS help prevent sticking and nonfunctioning of finely fitted valves, pistons and other precision-made components.

Model PX-2 High Pressure Aircraft FERROFILTER

3000 psi working pressure . . . 12 gpm flow capacity . . . 3 lbs dry weight . . . ¾—16NF—3 thread for ½" tube connection. Spec. AND-10050 . . . Size 5⅜" long, 2½" dia. Model PX-1 for 6 gpm, ⅜" tube.

Model P2H-50 High Pressure Industrial FERROFILTER

5000 psi working pressure . . . 12 gpm flow capacity . . . 15 lbs dry weight . . . for ¾" taper pipe, NPTF; also ¾" tube connection. Spec. AND-10050. Others rated at 2000 psi; Capacities up to 40 gpm.

Write for Bulletin HP-56 and other literature

S. G. FRANTZ CO., Inc.
Brunswick Pike & Kilne Ave.
P. O. Box 1138 Trenton 6, N. J.

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SAVE ...use plant personnel

to install your own overhead conveyor systems with R-W "Zig-Zag"® CONTINUOUS POWERED CONVEYORS

It's easy—much like "building with blocks." Just take so many standard R-W "Zig-Zag" components and put them together into a *custom* conveyor system to meet your exact needs. *It's economical*—for R-W "Zig-Zag" conveyors can be "self-assembled" and installed by your own plant personnel. "Zig-Zag" systems may be easily expanded, modified or relocated at a later date . . . they are economical to purchase, install or maintain. Easily installed in any plant—large or small. Write today . . . request Catalog A-93R.

RICHARDS-WILCOX MFG. CO.
435 W. THIRD STREET • AURORA, ILL. • Branches in Principal Cities

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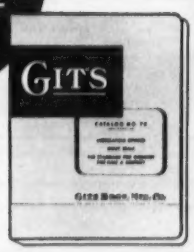
523 GITS OILERS AND GAUGES READY TO SHIP



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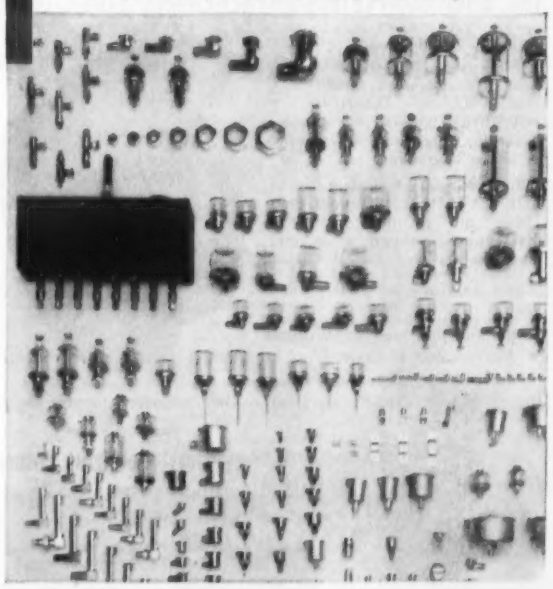
Specialists in Lubricating Devices and Shaft Seals for Almost Half-A-Century



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Tubular SPEED CLIPS®

take positive "bite" to hold assemblies tight!

- One-piece spring steel
- Snap into stud-receiving position from front side
- Perfect for attaching name plates, grille work, trim, knobs, insulation, dust shields
- Use with unthreaded studs or rivets
- Virtually "nails" panels together where only one side is accessible
- Permanent lock or removable types

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TINNERMAN PRODUCTS, INC.

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VIBRA-WASHER

...THE COMPLETELY NEW AUTOMATIC PARTS WASHER AND METAL CONDITIONING MACHINE

- Labor saving
- Automatic unloading
- For single or multi-stage operations
- No nesting of parts during cleaning or conditioning cycle
- Adjustable capacities to 10,000 lbs. per hour

The versatile new Simplicity VIBRA-WASHER, revolutionary machine for washing and conditioning of small metal parts, stampings and castings, employs a vibrating work carrier that automatically conveys parts through cleaning or conditioning bath. Solution is forced around parts, even into blind drillings and slots. In single stage, VIBRA-WASHER removes chips, oil and grease quickly . . . economically. In multi-stage, several units in line will provide cleaning, rinsing and phosphating, eliminating "between-stage" handling. Write today for Bulletin 107, to: Industrial Washer Division.

Simplicity TRADE MARK REGISTERED

212 ENGINEERING COMPANY • DURAND 15, MICH.

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MULTI-USE, SOFT RUBBER BONDED ABRASIVES

THE ONLY COMPLETE, COMPREHENSIVE STOCK LINE!

Achieving

A Unique, Rubber-and-Abrasive Action. *Simultaneous* BURRING • FINISHING • CLEANING • POLISHING, bridging the gap between the grind and buff, *frequently in one operation!*

Wheels • Sticks • Rods • Blocks JOB-MATCHED to your machine and manual operations. Exceptionally suited to automation production.

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WELDON ROBERTS RUBBER CO.

95 N. 13th St., Newark 7, N. J.

America's Pioneer Manufacturer of Rubber-Bonded Abrasives

▲ For more details circle NED-861 L9 on enclosed inquiry slip ▲

New Literature & Catalogs

Long-Life Concrete Floors

Master Builders Co.—How and why Masterplate "iron clad" concrete floors last up to six times longer than ordinary concrete floors is explained in 24-page Bulletin MP-4d. Such features as wear and corrosion resistance, economy, spark resistance, static dissemination, color, and nonslip, nondusting, and easy-to-clean surfaces are discussed.

▲ For more details circle NED-862 L9 on enclosed inquiry slip ▲

Industrial Chemical Products

Dow Chemical Co.—"Products of the Dow Chemical Co." is a 44-page compilation which lists the properties and uses of some 375 industrial, pharmaceutical, and agricultural chemicals, both established and developmental. An expanded section deals with plastics and coating products, and a new section has been added on automotive chemicals, textile fibers, and the company's Dowell division.

▲ For more details circle NED-863 L9 on enclosed inquiry slip ▲

Metal Process Belts

Ashworth Bros., Inc.—Illustrated 34-page catalog is entitled "Metal Process Belts for High Temperature and Allied Applications." Comprehensive data presented cover engineering, installation recommendations, various weave designs and specifications, positive drive chain edge belts, and other Ashworth designs.

▲ For more details circle NED-864 L9 on enclosed inquiry slip ▲

Indicators, Lights, & Pushbuttons

Transistor Electronics Corp.—30-page engineering reference and catalog deals with conventional and transistorized neon and incandescent indicators, pushbutton switches, combination indicator-switches, decimal readout devices, and other display panel components. Also described is a transistor-diode tester.

▲ For more details circle NED-865 L9 on enclosed inquiry slip ▲

Tips on Wire Splicing & Terminating

Buchanan Electrical Products Corp.—Vest-pocket size 36-page booklet "pre-SURE-TIPS" gives over 25 helpful and time-saving applications of pres-SURE connectors for solderless wire splicing and terminating. Step-by-step procedures are shown, and recommended fittings are described.

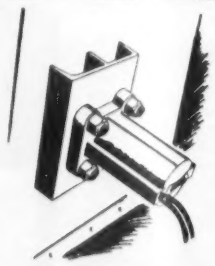
▲ For more details circle NED-866 L9 on enclosed inquiry slip ▲

Aluminum Forging & Forged Aluminum

Over 200 illustrations are used in 336-page book, "Kaiser Aluminum Forgings—Product Information," which describes in detail the various types of forging processes. Design and manufacturing information aids the engineer in creating stronger and lighter parts formerly made of other metals. It also aids in determining the type of forging applicable to specific products. Much technical data are included. Available free when requested on company letterhead, or for $7.50 for personal copies. Write to Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, Oakland 12, Calif.

▲ For more details circle NED-867 L9 on enclosed inquiry slip ▲

Shake Loose those bin problems with a CLEVELAND VIBRATOR



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Bin Stuck Lately?

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11K-2744 Clinton Ave. • Cleveland 13, Ohio

See our advertisement in the Chemical Engineering Catalog

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X-acto® PRECISION KNIVES

It's amazing how many different jobs you will find for your X-acto knife once you take hold of it. Convenient and versatile, yes, but infinitely safer than razor blades or jack knives. Wide assortment of handle shapes and surgically-sharp interchangeable blades. Available at your electronic jobber.

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Would you like to try an X-acto? Send $1.00 (special offer) for knife and blade assortment.

HANDICRAFT TOOLS, INC.

a division of X-ACTO, INC.

48-416 Van Dam St., Long Island City 1, N. Y.

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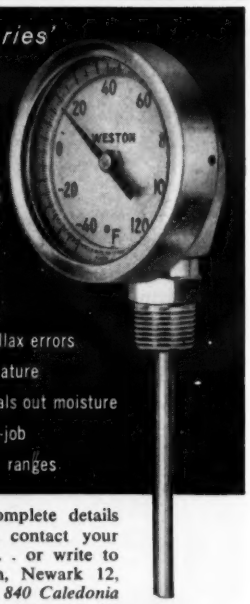
The Weston '4000 Series'

NEW HEAVY-DUTY BI-METAL THERMOMETERS

give you—



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- In-line scales . . . eliminate parallax errors
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- Full line of sizes, stem lengths, ranges

FOR NEW LITERATURE giving complete details and name of local distributor, contact your nearby Weston representative . . . or write to Daystrom-Weston Sales Division, Newark 12, N. J. *In Canada: Daystrom Ltd., 840 Caledonia Rd., Toronto 19, Ont. Export: Daystrom Int'l., 100 Empire St., Newark 12, N. J.*

WESTON A DAYSTROM UNIT

Bi-metal Thermometers

WORLD LEADER IN MEASUREMENT AND CONTROL

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Eliminate... SEWER-CAUSED WORK STOPPAGES!

Lowest Upkeep

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Write For FREE *"On-the-job" Demonstration or Catalog.*

"Flexi-Cleaner" LIGHTEST MOST POWERFUL SEWER MACHINE on the Market

• Safe One-Man Operation • Reverses Right or Left • Instant Automatic Chuck and Clutch • 3 Speeds---125, 250 and 500 RPM • Cables 4 Times Stronger Than Any Other

FLEXIBLE PLUMBERTOOLS, INC.

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FRANK DONOVAN COMPANY, 9 S. CLINTON ST., CHICAGO 6, ILLINOIS

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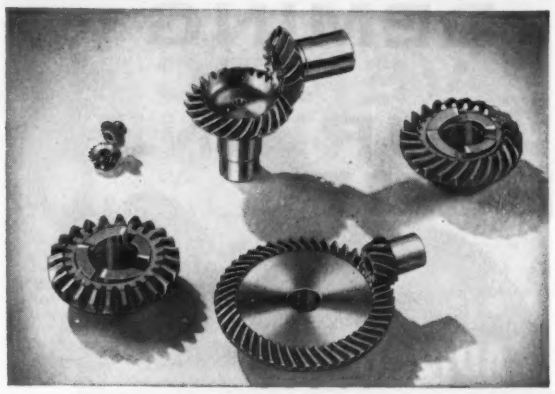

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WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARS

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Onan NEWS REPORT

Onan 13 H.P. engine powers 100-mile-an-hour air blast!

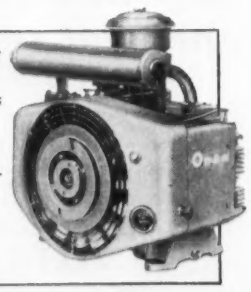
This Model 50 Rotomist, manufactured by the John Bean Division of Food Machinery and Chemical Corporation, is a highly mobile mist sprayer used for pest control, sanitation, and treatment of tree diseases. Powered by a 13 horsepower Onan CCK engine, the Rotomist delivers 12,000 cubic feet of air per minute at a velocity of 100 miles per hour.

The Onan CCK offers unique advantages for this type of mobile application. It is capable of *sustained operation at over 3,000 r.p.m.* Alternate-firing, two-cylinder, opposed design is compact and *free from vibration.* Extra-large bearings and rugged construction make it a dependable, long-life power source.

Give *your* equipment a performance *bonus* with Onan CCK power!

Onan Model CCK-Gasoline or gas-powered

- Over-square design; 3¼-inch bore; 3-inch stroke.
- Rotating Stellite-faced exhaust valves.
- Solid Stellite exhaust valve seats.
- Full pressure lubrication.
- Axial-flow cooling.
- Short, extra-heavy crankshaft.
- 3-quart oil sump.
- High tension magneto ignition.



Call the Onan distributor listed in your telephone book or write for complete specifications.

D. W. ONAN & SONS INC.

ELECTRIC PLANTS GENERATORS ENGINES ENGINE-COMPRESSORS

7173 University Avenue S.E. • Minneapolis 14, Minnesota

Onan PRODUCTS

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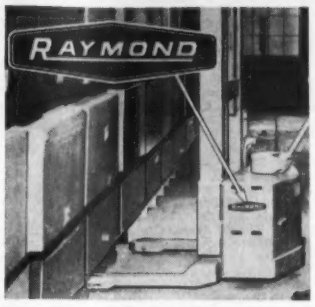
New Processes & Materials

NAMEPLATES made of color-fast aluminum



Custom made in any size or design and in one or more colors, these aluminum nameplates can be supplied with various types of adhesives for fast and easy application. The brilliant, color-fast, anodized name plates are usable as trademark or insignia and for marking and decorating equipment, parts, and machinery. They resist organic solvents and extreme weather conditions. All colors and copy (printing) are sealed into the anodized plates which can be applied to any flat, curved, or angular surface. Made by **Allied Decals, Inc.**, 8002-67 Hough Ave., Cleveland 3, Ohio.

▲ For more details circle **NED-874 L9** on enclosed inquiry slip ▲

TINTED GLASS COATING applied to windows in position

Heat, fade, and glare of the sun's rays are controlled by reflection and absorption through application of a tinted alkyd based formulation to windows. The Du Pont transparent gloss coating is applied by a flow process without interrupting nearby operations. It bonds tightly to the window glass and may be washed in a standard manner without scratching, peeling, or chipping. Drying time is 30 to 40 min. Eight colors are available. Glass tinting service is offered by **American Glass Tinting Corp.**, Box 6565, Houston 5, Tex.

▲ For more details circle **NED-875 L9** on enclosed inquiry slip ▲

PLASTIC REPAIR COMPOUND used on metal, concrete, or wood

Dents, cracks, and holes in anything made of steel, iron, brass, bronze, aluminum, concrete, wood, and compositions can be repaired with Plastic Filler. It mends broken pipes, leaking tanks and radiators; seals concrete floors; and repairs mechanical equipment. Material will not dry out, corrode, crack, rot, rust, expand, or shrink, making it useful for constructing forms, dies, and jigs. Made by **Dudley Plasticators, Inc.**, Box 352, Webster, Mass.

▲ For more details circle **NED-876 L9** on enclosed inquiry slip ▲

where and when you need it!

Versatile, plug-in steam generator works wonders on wide range of jobs . . .

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THE ELECTRODE STEAM BOILER

STEAM GENERATOR

Literature available.

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Pantex STEAM GENERATOR DIVISION

MANUFACTURING CORPORATION

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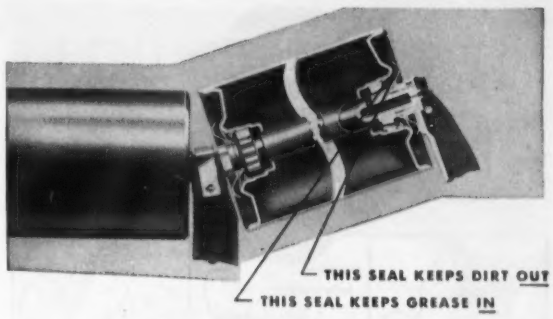

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Greater dependability and longer life offset slightly higher initial cost. Catalog 909 tells the complete story.

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THE JEFFREY MANUFACTURING COMPANY

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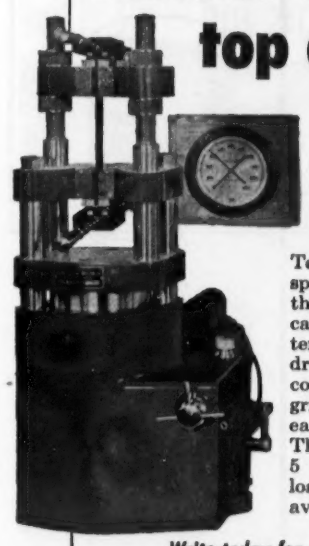
Tensile test with top accuracy



Use this simple hydraulically powered fast-acting tester

Test the tensile strength of spotwelds, strip, wire, anything within its 20,000 lb. capacity. The Model ST-1 tensile tester has a hydraulically powered, easily controlled ram. Self-acting grips are open-sided for easy specimen insertion. They will accept specimens 5 to 9" in length. Various load gauges and grips are available.

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DETROIT TESTING MACHINE COMPANY

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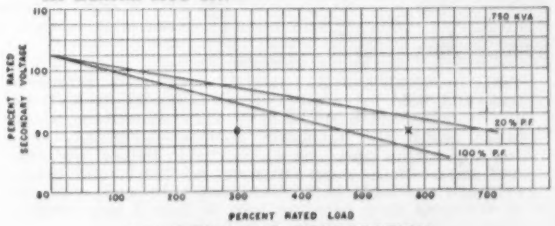
This line of Acme Electric machine tool transformers has ability to handle momentary high overloads far beyond their normal rated capacity. Because of this inherent overload capacity when needed, it is often possible to use a smaller size Acme Electric control transformer than the usual conventional types. This typical regulation curve is proof of performance. Write for Bulletin MTC 307.



ACME ELECTRIC CORPORATION

3011 Water St. Cuba, N.Y.

Acme ACME Electric TRANSFORMERS

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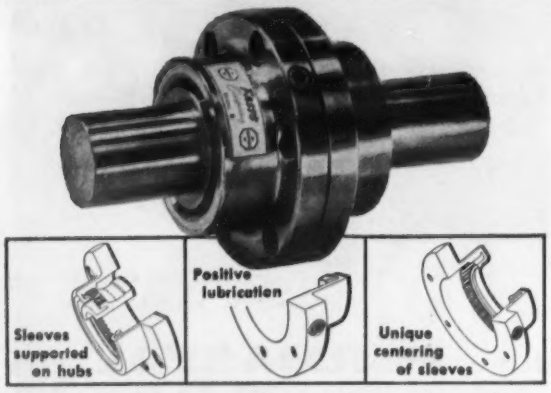

Fast's Model B Coupling reduces downtime and upkeep for light-to-medium drives!

Now you can profit from the durability and economy of famous Fast's couplings in a smaller and lower-cost version —available in 5 sizes for shafts ½" to 3⅛" in diameter.

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Engineered Products Sold with Service

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MANUFACTURERS OF MICROMETER DIAL INDICATORS AND GAUGES

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New "Series 16" magnets proved strongest, most efficient units made.** Provide ultimate operating advantages at price of ordinary magnets. Remove tramp iron and fines; protect machinery; prevent product contamination; reduce downtime; increase production.
**Pull tests • Gauss readings • Dynamic tests

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*Big, fact filled folder tells the complete "Series 16" story. Write to

ERIEZ HI-POWR MAGNETIC SEPARATORS

ERIEZ Mfg. Co., 80-Y Magnet Drive, Erie, Pa.

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NEW! available NOW!

The Midget Floating Holder Hollow Mill, flange type, with micrometric adjustment, designed to permit easy compensation for any spindle misalignment.

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It shows complete line of adjustable hollow mills. Our Engineering Dept. is at your disposal for special requirements.

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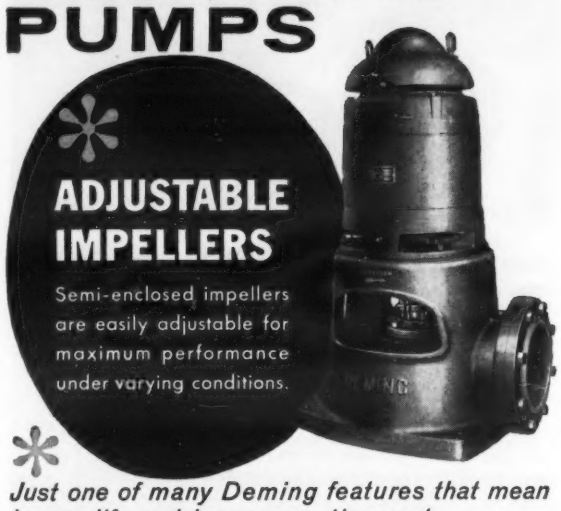

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Just one of many Deming features that mean longer life and lower operating costs

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New floor waxes resist dirt

New MULTI-CLEAN Waterproof Wax formulations *completely* eliminate factors which cause the permanent "tack" inherent in ordinary floor waxes. *Result:* Floors need cleaning less often and when they *do* need cleaning, dirt is more easily removed.

These new Waxes also excel in stability, very high resistance to blackmarking, ease of application, levelling, fast drying time, adhesion, buffability, water resistance, wear resistance, gloss, color retention, easy removal, and slip resistance.

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Dept. NE-62-119 2277 Ford Parkway, St. Paul 16, Minn.

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STAYS IN PLACE UNTIL ASSEMBLY.

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Will Lead to Savings!

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WLS STAMPING COMPANY
3287 E. 80th Street • Cleveland 4, Ohio

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45 STOCK SIZES IMMEDIATE DELIVERY

You can specify HALLOWELL collars in no less than 45 different standard sizes from 1/16 to 3 inch bore. And you can get them immediately from local dealer stocks. HALLOWELL steel collars are precision machined from first quality bar stock. They feature close tolerances, a fine finish, and perfect balance. Standard collars are supplied with UNBRAKO knurled cup point socket set screws—famous for their locking reliability. Where desired, other points can also be furnished. All collars are size marked for quick identification. See your authorized SPS distributor or write direct for Bulletin 868.

INDUSTRIAL FASTENER Division SPS

JENKINTOWN 24, PENNSYLVANIA

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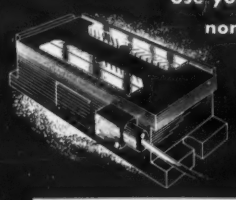
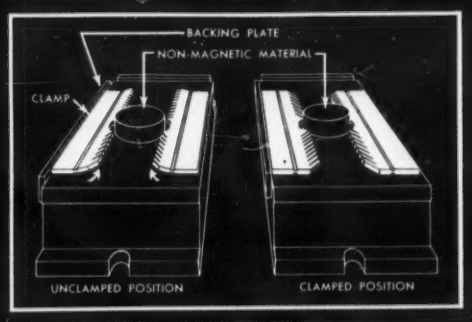
Use your magnetic chuck to hold non-magnetic materials, too!



Magna-Vise* eliminates cumbersome fixtures



Work-piece is placed on chuck between jaws of Magna-Vise. When chuck is energized, jaws draw down firmly against chuck surface and hold work-piece solidly in place. Magna-Vise quickly repays its low cost. Four sizes, precision-made. Priced from $28.00 to $55.00. Write Dept. NM-119.

*Pat. No. 247,297

MAGNA-LOCK, INCORPORATED
BIG RAPIDS, MICHIGAN, U.S.A.

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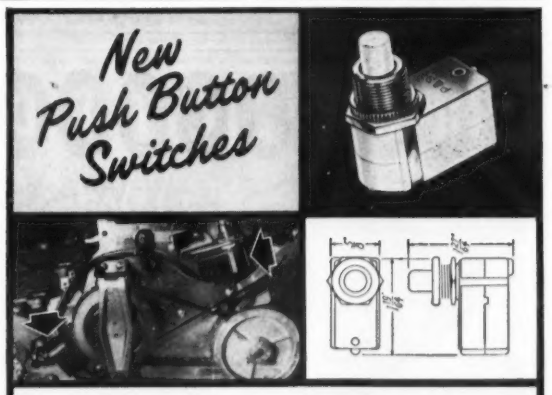
New Push Button Switches



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Write Dept. NED-1159 for complete information.

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SYRACUSE 9, NEW YORK

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In Canada: Renfrew Electric Co., Ltd., Toronto, Ontario

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Cuts up to 17 ga. MONEL and STAINLESS

Here's the fast way to slash sheet-metal cutting costs. The new Model 200 MILWAUKEE Shear cuts any shape faster, easier, and with far more accuracy than was ever before possible.

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MILWAUKEE, WISCONSIN

Find Your Nearest Dealer in the Yellow Pages — look under "Tools—Electric"

A9-8013

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STORING ★ HANDLING ★ SHIPPING

- Virtually indestructible—electro-welded steel rod construction
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Springport, Michigan

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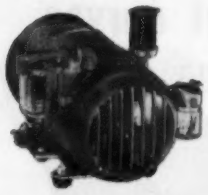
Model 0321



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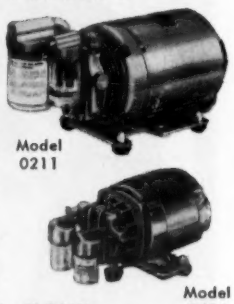

Model 0211

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New Literature & Catalogs

Optical Tooling & Aligning

Keuffel & Esser Co.—"Optical Tooling and Alignment Equipment" is title of 28-page treatise which also catalogs and describes equipment for production tooling, machine alignment, quality control, and inspection. Among products covered are jig transits, alignment telescopes, collimators, sight levels, sight telescopes, test equipment, and accessories.

For more details circle NED-898 L9 on enclosed inquiry slip

Industrial Hose & Fittings

Weatherhead Co., Ft. Wayne Div.—Specifications, technical data, descriptions, applications, and installation instructions on Weatherhead hose and hose assemblies, brass and steel tube fittings, hose and tube working tools, stock cabinets, hose racks, and other specialty products comprise 128-page Catalog C-300. It is designed for ready reference.

For more details circle NED-899 L9 on enclosed inquiry slip

Industrial Saws & Cutting Tools

H. K. Porter Co., Disston Div.—Four catalog sections have been made available on industrial saws and cutting tools. Solid and inserted tooth circular saws are subject of 32-page Section A. Other sections are on wide and narrow band saws, metal-cutting saws, and machine knives. Recommendations are included on tools for most cutting jobs.

For more details circle NED-900 L9 on enclosed inquiry slip

Manual Press Control

Minneapolis-Honeywell Regulator Co., Micro Switch Div.—How the Micro Switch trip control can be applied to manually operated stamping machines, air presses, riveters, press brakes, shears, paper cutters, and similar machines to assure safety and higher production is explained in 16-page Catalog 65b. Application data and ordering information are included.

For more details circle NED-901 L9 on enclosed inquiry slip

Vibration Absorbing Mounts

Hamilton Kent Mfg. Co., Rexon Mount Div.—How the rubber-in-shear principle is used in Rexon mounts to provide vibration isolation and acoustics control when used under heavy, vibration or shock producing machines is related in 8-page bulletin. Sizes are available to handle loads ranging from 3 to 20,000 lb per mount.

For more details circle NED-902 L9 on enclosed inquiry slip

Floor Trucks

Hamilton Caster & Mfg. Co.—Expanded line of four-wheel platform, box, shelf, wagon, and two-wheel trucks, dollies, semilive skid systems, and trucks for special uses is presented in detail in illustrated 56-page Catalog 140. New items include trailers and couplers, barrel drain racks, lever dollies, Fiberglas box trucks, and cylinder trucks. A buyer's guide aids in selection of equipment.

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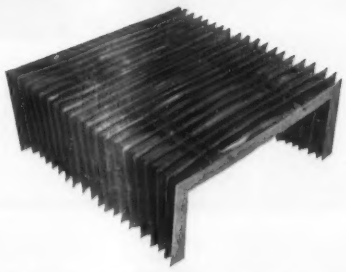
PROTECTED WAYS



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BOOTS . . . SLEEVES . . . WAY PROTECTORS

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Yes, GRC offers the widest range to choose from—hundreds of stock sizes—thousands of thread and blank combinations. Smart in appearance with their exclusive finger-grip wings, they have smooth-acting washer-like bosses and a bright, corrosion-resistant, rustproof finish, that can be used "as is" or plated. Most important, GRC's unique mass-production die casting methods guarantee greater uniformity, closer tolerances, clean threads. . . and lower costs.
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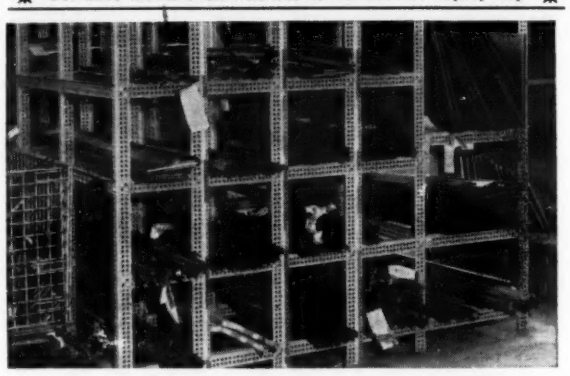

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In Canada: Safety Supply Company, Toronto
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REAMERS IN DECIMAL SIZES

470 REAMERS ARE CARRIED IN STOCK VARIATIONS OF .001

▼ Sizes from .032, .033, .034, .035, .036, etc., all the way up to .501. Any size required larger than .501 . . . blanks can be ground to your exacting specifications, delivered in 3 or 4 days. By purchasing SUPEREAM Reamers in steps of .001 you SAVE time, labor and money in the cost of extra machining and lapping.

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Phone Libertyville 2-4200

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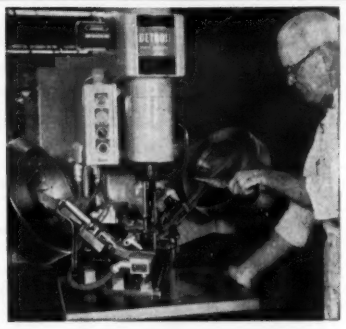
19,000 ASSEMBLIES



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Automatic Electric Company has made this small parts assembly *fully automatic* with a DPS assembly machine. Most important, the company has realized increased capacity with fewer rejects on the telephone terminal assemblies.

If you have a small parts assembly problem see Detroit Power Screwdriver Company. Industry's most advanced design screwdriving machine is the result of over three decades of specialization. Write for details. 15.137

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USERS REPORT CARTON CLOSING BY STAPLING FASTER THAN TAPE—AT LESS COST!

International "AIR BOXER" stapler

REPORTS coming to us from CUSTOMERS all over the country are telling us how International "AIR BOXER" is CUTTING carton closing COSTS for these users. For example:

"OUR MATERIAL COSTS CUT! Often in HALF, because just a few wide crown steel staples do the work of many feet of tape, at lower cost."

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"BETTER CLOSURE IN EVERY WAY!" Gratified International customers sum it up as follows: "Cartons are sealed securely and neatly, stack better...pop-proof, pilfer-proof ... ship safely and save on material and labor."

ASK YOUR INTERNATIONAL REPRESENTATIVE for further details, or write . . .

International Gold Crown — Steel staples seal securely

International Staplers
INTERNATIONAL STAPLE & MACHINE COMPANY
P. O. BOX 270 • HERRIN, ILL.
Originators of Carton Closing Staplers

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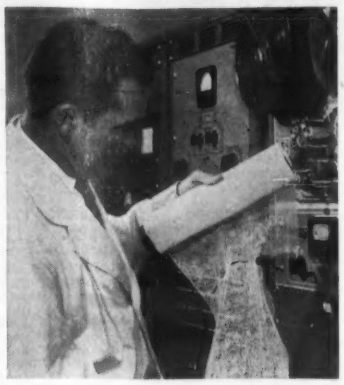
New Processes & Materials

SCRATCH-FREE FABRIC
nonwoven type picks up, holds dust



Scotch dusting fabric No. 550 consists of thousands of pockets which pick up and hold dust. The nonwoven, scratch - free fabric can be used several times with no loss of effectiveness. Neither cloth or paper, it can be used on precision instruments, electronic equipment, and other delicate apparatus. It is formed of extra-long rayon fibers bound together with a synthetic, odorless resin. There are no loose fibers or edges to unravel. Fabric is offered in 30-yd, 12-in. wide rolls of 60 individual dusters. Price is $1.98. Made by **Minnesota Mining & Mfg. Co.**, 900 Bush Ave., St. Paul 6, Minn.

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PROTECTIVE COATING
one-coat type controls corrosion

Both primer and topcoat corrosion-control qualities are provided by Prufcoat Primastic, a one-coat protective coating that combines rust-inhibiting and chemical resisting properties. One coat will protect equipment in industrial, chemical, paper, and petroleum industries. Single pass with brush or spray deposits a 10-mil thickness, and one cross-pass spray yields a 20-mil dry film thickness. Cost per mil foot is slightly over 1 cent. Flash point is over 100° F. Developed by **Prufcoat Laboratories, Inc.**, 61 Main St., Cambridge, Mass.

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NEOPRENE FILLER TAPE
fuses into solid insulation

One-eighth inch thick Neofil neoprene electrical filler tape produces a solid insulation with only one wrap and requires no covering tape. It fuses rapidly upon application into a single mass which can be shaped and molded by hand to conform to irregular shapes and contours. Material has good resistance to hydrocarbons, good electrical properties, and resists weathering. It is also self-extinguishing and is packaged in 1½-in. wide by 5-ft long rolls. Made by **Bishop Mfg. Corp.**, 42 Canfield Rd., Cedar Grove, N. J.

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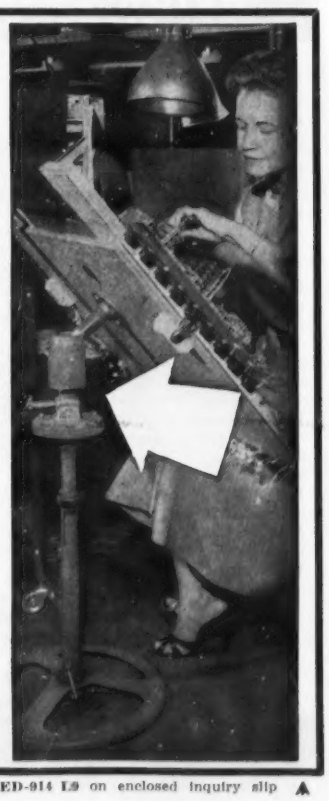
POWRARM IN . . . PRODUCTION UP! UP! UP!



FRIDEN CALCULATING MACHINE CO. INCREASES WORKER EFFICIENCY WITH PowRarm! By using Wilton PowRarm Work Positioners as the basic unit of adjustable assembly boards, Friden increases production through a savings of operator time, motion, and assembly space. PowRarms allow 360 degree rotation of the new boards, and workers can incline them at various angles. May be mounted on benches, conveyors, or floor stands as illustrated. Many firms use PowRarm for inspection, servicing, soldering, assembly, and any work positioning operation. Ask your Wilton distributor for a demonstration.

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TOOL MFG. CO., INC.
Schiller Park, Ill.
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NED 119

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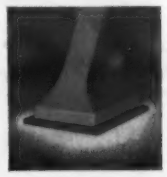
with low-cost **ISOMODE® PADS!**

A pair of shears and a standard package of Isomode Pads . . . that's all you need to isolate troublesome shock and vibration on as much as 80 tons of machinery.

Made of durable, resilient DuPont neoprene, these ribbed pads support up to 50 lbs. per sq. in.—do an effective job of muffling plant noise and reducing maintenance costs on machines and buildings.



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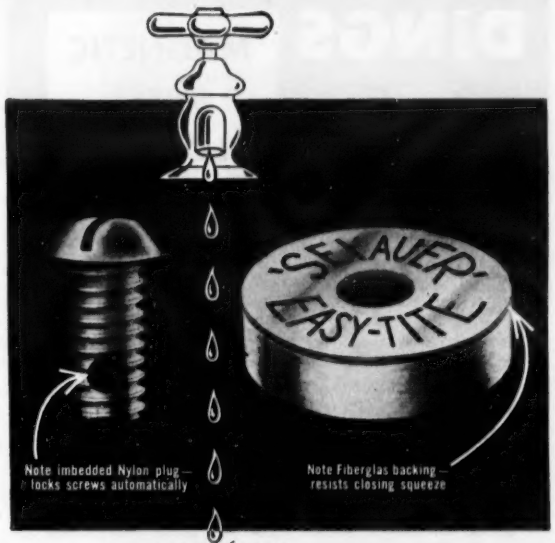

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★ 9-in-10 washers are fastened with TOO LONG or SHORT SCREWS thus loosen and destroy themselves. Leaks quickly follow!

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—Save Handling Time
—Cut Production Costs

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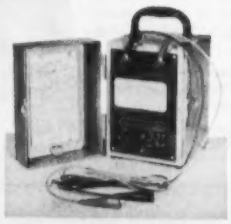

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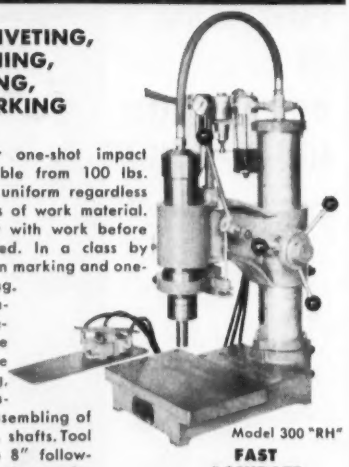

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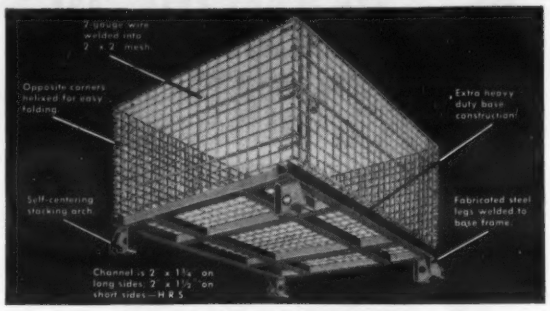

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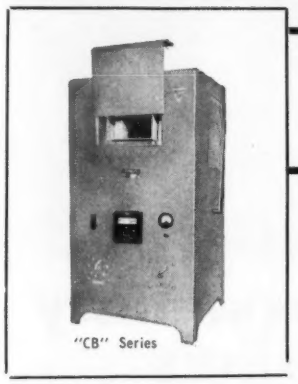

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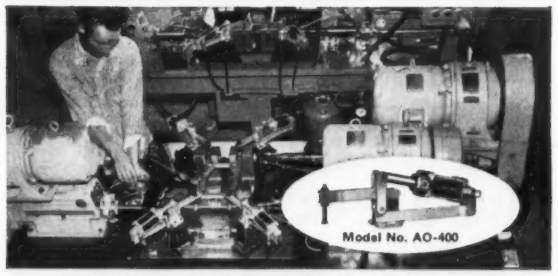

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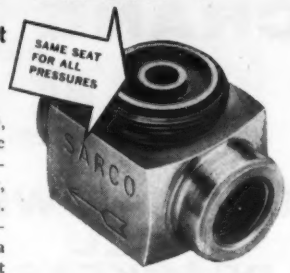

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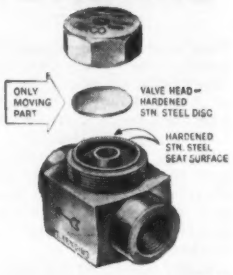

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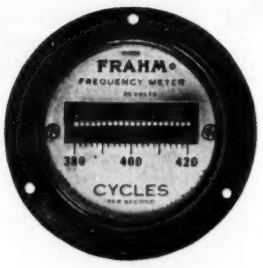

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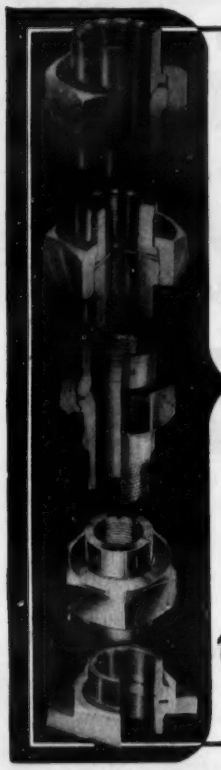

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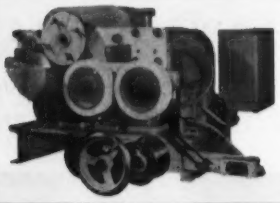

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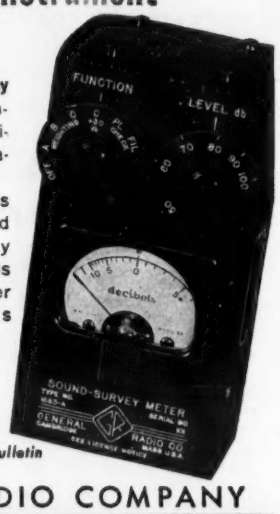

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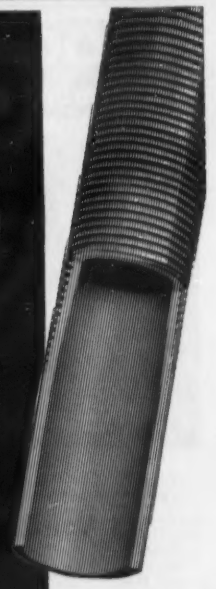

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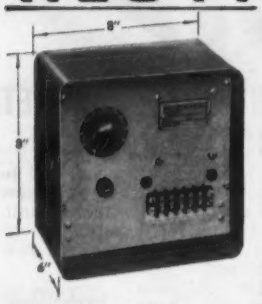

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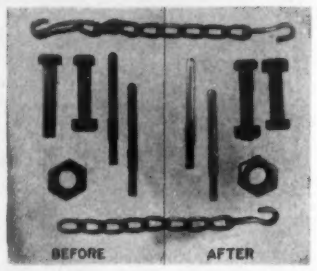

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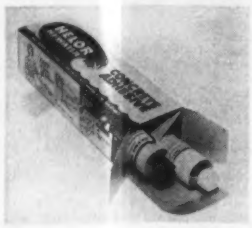

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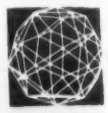

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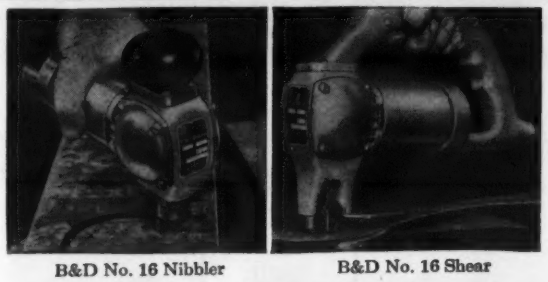

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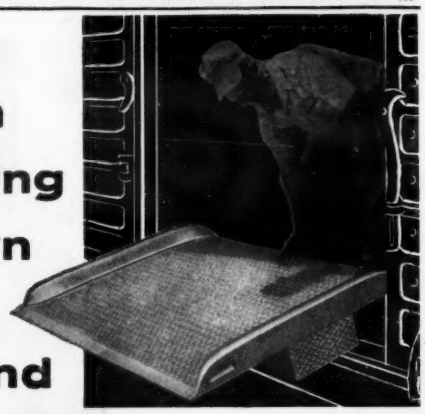
man putting down a sound investment!



This company has made a wise investment—one which will pay many dividends over a long period of time! The man above is dropping a Magliner magnesium dock board in place on the company's dock. This new Magliner will speed loading . . . get more out of power trucks and other loading equipment . . . keep costs down! Made of light, strong magnesium, it will protect men, loads and equipment against accidents and costly damage. It will also pay other big dividends! Magliners are low in initial cost—and because they provide dependable, long-life service with less maintenance they give you greater economy *ALL* ways! Find out today, how Magliner dock boards can cut costs in your operation. Write for Bulletin DB-204!

MagLiner MAGNESIUM DOCK BOARDS

MAGLINE INC. • P.O. BOX 511 • PINCONNING, MICHIGAN
Canadian Factory: Magline of Canada, Ltd., Renfrew, Ontario

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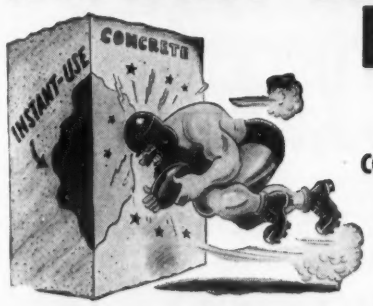
INSTANT SETTING PATCH



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